March/April 1992 $2.00

MONTANA OUTDOORS

Our Point of View

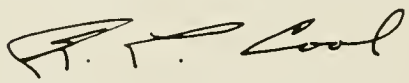
BARBARA THOMAS

SURROUNDED BY SOME OF THE MOST MAGNIFICENT natural and recreational resources in the world, we sometimes find ourselves blinded to the fact that many of our fellow Montanans are unable to share in all of the wonderful opportunities these resources afford. For those of able mind and body, the opportunities for experiencing Montana's great outdoors seem endless, and what barriers there may be to taking part in certain activities only add to the challenge of those pursuits. Yet, these same barriers may deprive those with disabilities of the chance to partake in activities that make life under the Big Sky so appealing.

Three years ago, the Department of Fish, Wildlife & Parks embarked on a major effort to address the rights and recreational needs of our family members, friends, and neighbors with disabilities. The department's new "Crossing the Barriers" program, which was spawned by that effort, represents not only our commitment to complying with the intent of federal and state laws, but also our recognition that our constituents with disabilities have the same right we all do to partake of the recreational opportunities and services we provide.

Beginning on page 31 of this issue, you'll find an article highlighting those steps we're now taking to ensure that our facilities and programs meet the needs of all of Montana's citizenry. As Judy Harris, FW&P's consultant and adviser on disability concerns, so pointedly explains in that article, providing opportunities for those with disabilities "should be important to everyone."

Based on the enthusiasm with which so many members of our staff have accepted and undertaken program assignments to date, I can assure you that removing those barriers to accessibility under this agency's control is certainly of importance to everyone at Fish, Wildlife & Parks.



K.L. Cool

Director

Montana Department of Fish, Wildlife & Parks

ALAN G. NELSON

Turn to page 35 for a spring photo essay.

State of Montana
Stan Stephens/Governor

Fish, Wildlife & Parks Commission
Errol Galt/Chairman
Greg Barkus/Vice Chairman
Elaine Allestad
Jim Rector
William Strattoo

Department of Fish, Wildlife & Parks
K.L. Cool/Director
Patrick Graham/Deputy Director for Staff Operations
Al Elser/Deputy Director for Field Operations
Dave Mott/Associate Director

Conservation Education Division
Roo Aasheim/Administrator
Vince Yannone/Assistant Administrator

Montana Outdoors Staff
Dave Books/Editor
Kay Mortoo Ellerhoff/Associate Editor
Bev Veneziano/Art Director

Montana Outdoors (USPS 360 280), the official publication of the Montana Department of Fish, Wildlife & Parks, is published bimonthly (January, March, May, July, September, and November). Contributions (manuscripts or illustrations) are welcome with the understanding that the department or the editor cannot be responsible for loss or damage. All contributions will be published at the discretion of the editor. For subscription information, phone 800/678-6668 (toll-free). Subscription rates are $7 for one year, $12.50 for two years, and $17 for three years. (Please add $3 per year for Canadian subscriptions. All other foreign subscriptions, air mail only, are $22 for one year.) Individual copies and back issues cost $2 each. Although ***Montana Outdoors*** is copyrighted, permission to reprint articles is available by writing our office or phoning us at 406/444-2474. All correspondence should be addressed: ***Montana Outdoors***, Department of Fish, Wildlife & Parks, 1420 East Sixth; Helena, MT 59601. ©Montana Department of Fish, Wildlife & Parks, 1991. All rights reserved. Indexed by States' Periodical Index, 1660 Smithville Road; Havre, MT 59501.

Postmaster: Send address changes to: ***Montana Outdoors***, Department of Fish, Wildlife & Parks, 1420 East Sixth; Helena, MT 59601. Second-class postage paid at Helena, MT 59601, and additional mailing offices.

MONTANA OUTDOORS

March/April 1992
Volume 23, Number 2

FEATURES

2 Watchable Wildlife—"Mysterious Birds of the Far-Away North"
by Dave Books
The eerie, high-pitched calls of snow geese drift down to us as they pass overhead, and we wonder where they've been and where they're headed.

8 Phillips' Wood Ducks Wins
by William Phippen
A rendition of three wood ducks by Thompson Falls artist Craig Phillips will grace Montana's 1992 waterfowl stamp.

15 Thompson Chain of Lakes: A Link to Natural Values
by John Fraley
This impressive lake chain is renowned for its fishing—it includes more than 20 lakes and ponds.

18 The Ferret Experiment
by Rosalee Richardson
As experiments with black-footed ferrets prove, endangered species recovery is a complex and difficult task.

27 Lands Legacy—"Beefing up the Blackleaf"
by Gary Olson
Initial results of a grazing program on the Blackleaf Wildlife Management Area are encouraging and hold promise for future use of this valuable management tool.

31 "Crossing the Barriers"
by William Phippen
The Department of Fish, Wildlife & Parks has embarked on a new program that addresses the needs and rights of the agency's disabled constituents. With an accompanying story, "Milestone on the Bitterroot," by Deirdre Boggs.

35 Perspectives—"Spring Ahead"
As these photos and quotes suggest, spring in Montana is just around the bend.

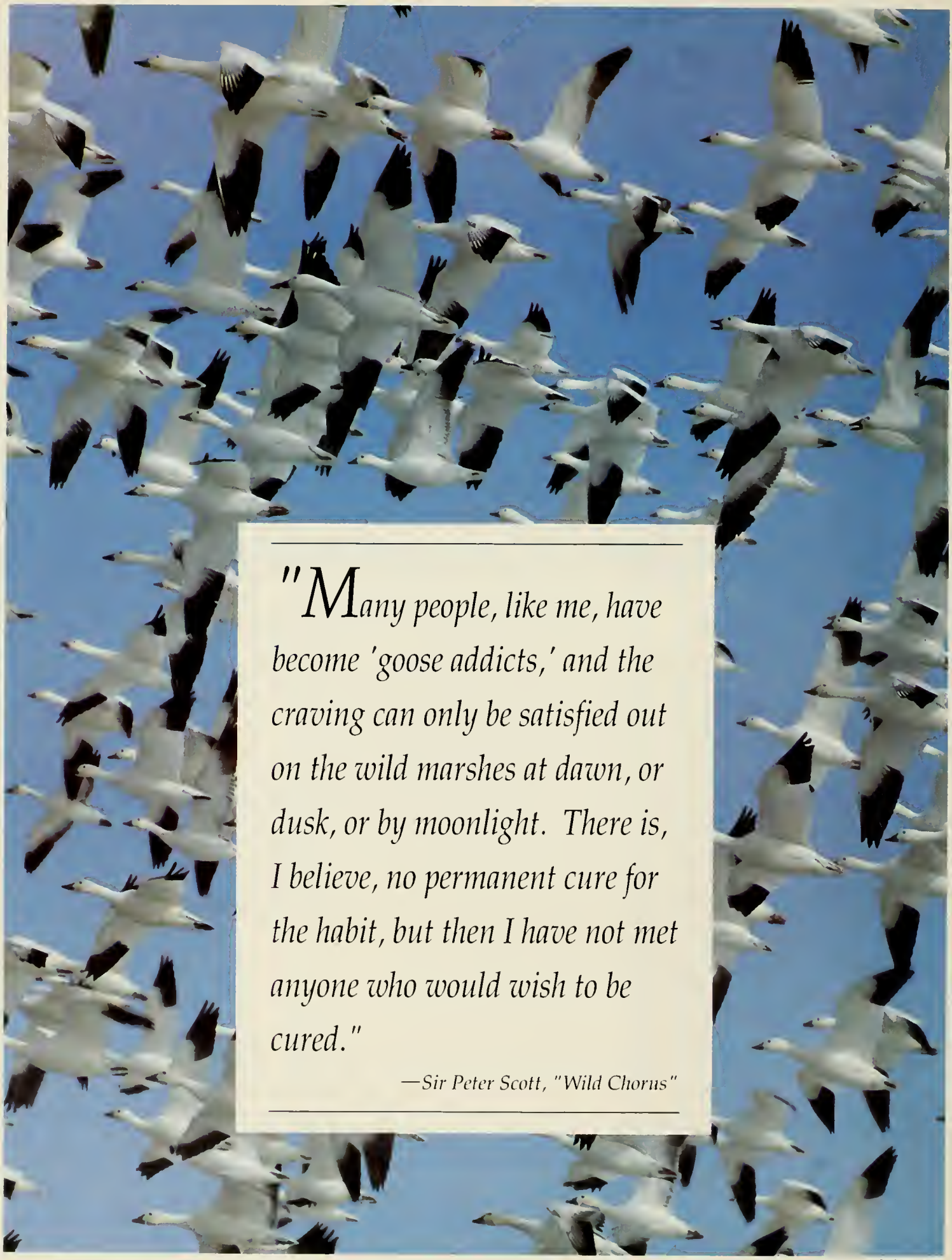
DEPARTMENTS

11 Catchall
24 Readers Respond
25 Book Reviews
26 Contributors

COVERS

Front Cover—About this time of year, blue grouse—like the one captured in a characteristic display of springtime exuberance by *Montana Outdoors* Editor **Dave Books**—head for lower altitudes. The blue grouse is the largest of Montana's three "mountain grouse" species; a mature male can weigh as much as three pounds.

Back Cover—Many people call it "Indian paintbrush." In Wyoming it's the state flower and it's often called "Wyoming paintbrush." No matter what you call it, spots of orange to reddish to scarlet dot the landscape wherever it grows. Its color and form are beautifully captured for our back cover by Lolo photographer **Charles B. Place, III**.



"Many people, like me, have become 'goose addicts,' and the craving can only be satisfied out on the wild marshes at dawn, or dusk, or by moonlight. There is, I believe, no permanent cure for the habit, but then I have not met anyone who would wish to be cured."

—Sir Peter Scott, "Wild Chorus"

DAVE BOOKS

MYSTERIOUS BIRDS
of the Far-Away North

by DAVE BOOKS

IT WOULD BE EASY TO LIVE IN MONTANA all one's life and never see a snow goose. Yet, twice a year, hundreds of thousands of these long-distance travelers pass through the state on their way to nesting grounds in the far north or to wintering grounds farther south. Their eerie, high-pitched calls drift down to us as they pass overhead on a starry night, and we wonder where they've been and where they're headed.

DAVE BOOKS

Lesser snow goose.

Pure white with black wing tips, snow geese are among the most beautiful of all geese. Their feet and legs are a deep pink, and the bill is pink with a black "grinning patch" along each side formed by the black edges of the mandibles. Immature birds are sooty gray on top of the head, the back of the neck, and the back.

Snow geese are highly social birds, migrating in large flocks and congregating in vast numbers as they stop to rest at a few choice locations along their migration routes. In Montana, the biggest flocks gather at Freezout Lake Wildlife Management Area and Benton Lake National Wildlife Refuge near Great Falls, although other waterfowl refuges around the state receive some birds as well (see sidebar).

According to Mike Schwitters, a veteran waterfowl observer who lives in Choteau, more than 150,000 snow geese may be present at Freezout Lake during the peak of migration. The Benton Lake refuge normally hosts 5,000 to 10,000 snow geese at peak times, says Refuge Manager Jim McCollum, although in some years there can be as many as 30,000. The wheeling, milling clouds of white geese, combined with flocks of graceful tundra swans that migrate through this area each spring and fall, offer a spectacular waterfowl viewing opportunity.

The snow geese stopping at Freezout Lake in the spring have left their wintering grounds in northern California only a short time earlier, says Schwitters, who spends part of every day during the migration looking for neckbanded geese with his 80-power Questar telescope. "Most of these birds are bound

KRISTI DUBOIS

Snow geese are present at Freezout Lake Wildlife Management Area for several weeks each spring, with numbers peaking during the last week in March.

for nesting grounds in the western Canadian Arctic,'' he says, ''although a small group are headed to an area near Prudhoe Bay, Alaska, and another small group will nest on Wrangel Island in Russia.''

Schwitters can tell a goose's destination by the color of its neckband, since snow geese return faithfully to the area in which they were hatched and later banded by waterfowl biologists. During clear, calm weather, he can read the inch-high characters on the neckbands with his telescope at distances of up to a mile. He reports his observations to the International Goose Project headquartered in Saskatoon, Saskatchewan, where project scientists are able to track snow goose migration patterns and glean important information on population sizes, harvest distribution, and survival rates.

Schwitters, a retired military officer who served two tours of duty at Malmstrom Air Force Base in Great Falls, enjoys birding, hunting, and especially observing the rich variety of waterfowl and shorebirds that frequent Freezout Lake. In 1990, he was honored by the Montana Fish, Wildlife & Parks Commission for his valuable volunteer contributions to waterfowl biology.

SCIENTISTS IN THE 1930s WHO FIRST VISITED snow goose nesting grounds in the far north were perplexed to find ''snow geese'' intermingled with ''blue geese,'' since it had long been assumed that the two were separate species. Some years later, taxonomists determined that the white and dark plumages are simply different color phases of the same species, *Anser caerulescens*. Snow geese migrating down the Pacific Flyway, which includes western Montana, are almost exclusively white-phase birds—the percentage of dark phase snow geese appearing at Freezout Lake is less than 1%. East of the Great Plains, however, birds in both the dark and white phases regularly appear together.

To further complicate matters, there are two subspecies of snow geese, lesser and greater. Lesser snow geese, by far the most common, weigh about six pounds; all the snow geese migrating through Montana belong to this subspecies. Greater snow geese winter along the Atlantic Coast and are slightly larger versions of the lessers, except that they have no dark color phase.

Often migrating along with snow geese in Montana are Ross' geese, which closely resemble snow geese except for their diminutive size (two to three pounds) and the presence of warty protuberances at the base of the bill. Like the snow geese that pass through Montana, most Ross' geese are white with black wing tips. There are, however, an estimated 300 dark-phase Ross' geese in the world, and Schwitters has recorded 12 of them at Freezout Lake. ''In recent years,'' he adds, ''several thousand Ross' geese have migrated through Freezout around the end of April, after the snow geese have already come and gone.''

Because the Arctic summer is so short, there is great urgency for snow geese to begin nesting at the earliest possible opportunity. Mates are selected on the wintering grounds—snow geese usually pair for life—and mating takes place on the journey north, so that females can begin egg-laying soon after their arrival. Most female snow geese nest for the first time when they are 3 years old.

As soon as patches of tundra are free of snow—usually by the end of May—the female chooses a nest site, scrapes out a depression, and builds up the sides with twigs, grass, moss, and lichens. She lays one egg per day—sometimes skipping a day—until her clutch of four or five eggs is complete. After the last egg is laid, she lines the nest with down from the underside of her body and begins incubation.

The gander stands guard nearby, protecting the nest from other snow geese and predators such as weasels, Arctic foxes, gulls, ravens, and parasitic jaegers (hawklike seabirds with hooked beaks). The female rarely leaves the nest during the incubation period, which lasts about three weeks. She will be emaciated by the time the eggs hatch, losing up to one-fourth of her body weight. In cold springs, female snow geese have been found dead on their nests a few days before egg hatching, having lost close to 50% of their body weight. The males, too, are devoted nest protectors, commonly losing up to one-fifth of their body weight while defending the nest site.

Because of the short summer, timing of snow goose nesting

is critical to survival of the young geese. Weather plays a major role. If snow cover delays nesting more than a few weeks beyond the normal initiation date, many snow geese will forgo nesting for that year. In general, the later that nest sites become available, the smaller the number of birds that nest, the smaller the clutches, and the poorer the hatching success.

In the long days of Arctic summer, the young snow geese grow rapidly on a rich diet of insects, grasses, sedges, and herbaceous plants. Weighing only 2-1/2 ounces when hatched, the goslings will grow to about five pounds in the next 90 days. The fledging period for snow geese is six weeks; most young snow geese take their initial flights in mid-August. The early onset of winter storms in the high Arctic dictates that birds be grown and capable of sustained flight by early autumn.

Snow geese are among the most social of all waterfowl, and nesting colonies often number several thousand birds. The largest colonies are on Banks Island in the western Canadian Arctic, Baffin Island north of Hudson Bay, and the McConnell River Delta along the west coast of Hudson Bay. Wrangel Island, which had an estimated population of 400,000 birds in 1960, was once the world nesting center for lesser snow geese, but numbers there have declined to less than 50,000 due to a series of unusually late springs and heavy predation from Arctic foxes. A major, multinational research project, which includes satellite tracking of radio-collared birds, is now under way to monitor the Wrangel Island snow goose population.

SNOW GEESE BEGIN MOVING SOUTH in stages in early September, following a number of migration corridors spread from east to west across the continent. Most of the birds that pass through west-central Montana originate their migration in the Mackenzie Delta region of the Canadian Arctic. They spend several weeks fattening on grain in "staging" areas in southeastern Alberta and southwestern Saskatchewan before moving on to Montana and points south. For most of these birds, the winter destination is northern California, although some will follow a more southerly route to New Mexico and Mexico.

Much smaller numbers of snow geese migrate through eastern Montana in the fall, with peak populations of about 5,000 stopping off at Medicine Lake National Wildlife Refuge in the northeastern corner of the state. These birds, which nest primarily in the central Arctic, are on their way to wintering areas in Colorado, New Mexico, the Texas Panhandle, and the Northern Highlands of Mexico.

The migrations of birds, and especially geese, perhaps because we hear them as well as see them, have always captured our imagination and piqued our curiosity. Wildlife artist Sir Peter Scott, in his book "Wild Chorus," expresses this attraction well: "They are mysterious birds coming from far-away northern lands, impelled by an unknown force and kept infallibly on their course by an unknown sense. They are wild and wary birds, a traditional quarry of man from immemorial times. Their flight is swift and their formations fill the sky, but I believe that their greatest appeal is to the ear....When the full moon rises over the marsh at dusk...it is the call of geese which makes one's heart leap."

Snow geese leaving northern California in the spring fly straight through to Montana or southern Saskatchewan, a distance of roughly a thousand miles. They start their trip after sunset, often arriving at Freezout Lake or Benton Lake refuge the next afternoon. Their flight speed averages around 50 miles per hour, and they cruise at altitudes of 2,000 to 5,000 feet, although they have been seen at altitudes of more than 12,000 feet.

Snow geese are present at Freezout Lake for several weeks in the spring, but numbers peak during the last week in March. Depending on weather conditions, individual flocks may stay anywhere from a few hours to a few weeks, but the average is 2-1/2 days. "The birds that arrive earliest tend to stay longest," says Mike Schwitters, "while later on, when they're in a hurry to get to the nesting grounds, they may come in and leave again the same day." In the spring of 1991, Schwitters observed the same neckbanded geese at Freezout on two separate occasions two weeks apart. "I'm sure these birds started north from Freezout, ran into bad weather, and came back, but I have no way of knowing how far north they may have gone before turning around," he says.

In the fall, snow goose concentrations are less predictable, but most birds pass through the Freezout area in mid- to late October. "Last fall," says Schwitters, "an early cold snap froze the ponds and most of the snow geese overflew the refuge. They probably went right on through to California."

Scientists studying bird migration theorize that birds like geese, which tend to fly in a V formation, create a partial vacuum, or slipstream, in their wake, which makes flying easier for the birds behind them. They also believe that traveling in a flock aids in navigation, since an individual bird may spot a familiar landmark, take the lead, and shift the flock's orientation accordingly.

While traveling in large flocks has certain advantages, such as affording greater protection from predators, it has its down side as well. One stormy March night in southeastern Nebraska, between 20,000 and 30,000 snow, white-fronted, and Canada geese fell victim to violent winds. The dead birds were strewn over an area of about 200 square miles. While investigations into the exact cause of death were inconclusive, it appeared the birds were killed by wind-shear type winds that reached velocities of 100 miles per hour.

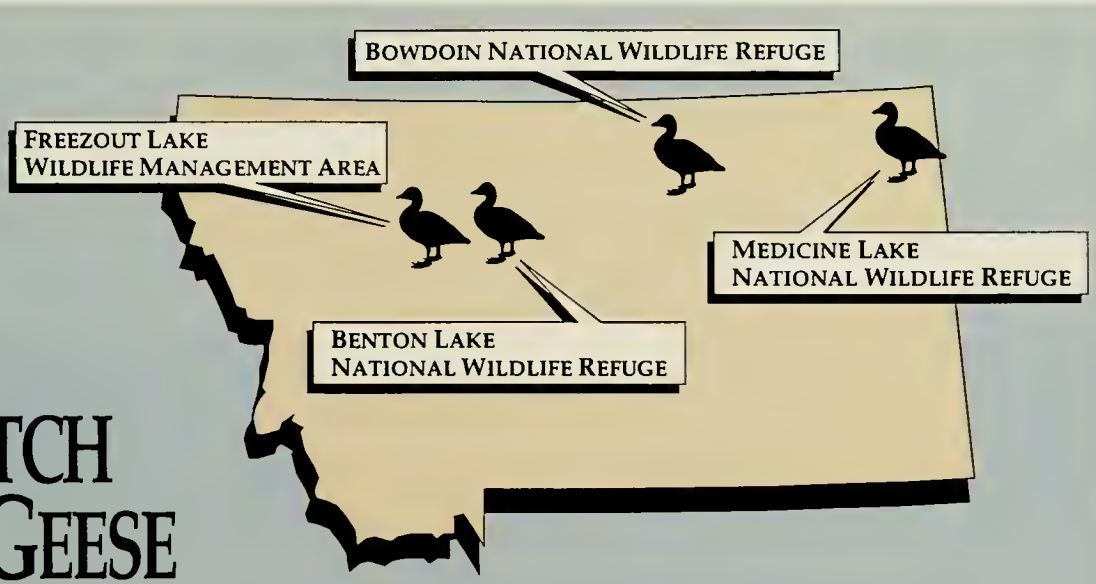
In his hundreds of hours of watching snow geese, Schwitters has never witnessed anything quite so dramatic. But he did see a single goose plummet from a milling flock one day, apparently the victim of a rare mid-air collision. That causes one to ponder how immense throngs of close-flying geese can wheel and pirouette with such near-perfect synchrony. Some experts have suggested this aeronautical precision stems from a sort of "flock mind," an instantaneous communication network, while others feel that all individuals in a flock are merely responding to the same environmental stimuli and to the movements of their neighbors.

Jeff Herbert, statewide waterfowl coordinator for the Montana Department of Fish, Wildlife & Parks, says that most snow goose populations across North America are healthy and

growing, with the exception of the Wrangel Island birds. "We divide the lesser snow goose population into four groups based primarily on where they nest," he says. "The mid-continent population nests mainly around Hudson Bay, and these birds now number more than 2 million. In fact, there's real concern that they're overpopulating the nesting grounds in that area and overgrazing important brood-rearing areas. Because of the population build-up, snow goose hunting regulations in the Central Flyway have been liberalized. The western populations, which nest primarily in the Northwest Territories, are also growing. The only question mark at this point is the Wrangel Island population, and we're just beginning to get better data on these birds."

BECAUSE THEY NEST IN THE FAR NORTH, snow geese have been spared the biggest problem faced by many other waterfowl species: loss of nesting habitat due to wetland drainage. Yet, destruction of wetlands along migration corridors and on traditional wintering grounds forces snow geese to congregate in unnaturally high densities, increasing their susceptibility to contagious diseases such as fowl cholera. Disease has been a serious problem on winter ranges in California and New Mexico, especially during drought periods when the birds are highly concentrated. "The possibility of large-scale die-offs from disease or nesting failures due to bad weather will always be there with snow geese," says Herbert, "but they're remarkably resilient birds. With wetland protection and good management, they'll be around for a long, long time."

Once again, spring is near. Snow geese are growing restless on their wintering grounds, responding to the ancient stirrings. Soon they will be in Montana, their wings flashing vivid-white against a deep-blue sky, their incessant clamoring restoring life to winter-dormant marshes. It's time to dust off the binoculars, load the camera, and get ready to enjoy one of the grandest waterfowl spectacles in North America. ■


BOWDOIN NATIONAL WILDLIFE REFUGE
FREEZOUT LAKE WILDLIFE MANAGEMENT AREA
MEDICINE LAKE NATIONAL WILDLIFE REFUGE
BENTON LAKE NATIONAL WILDLIFE REFUGE

PLACES TO WATCH SNOW GEESE

FREEZOUT LAKE WILDLIFE MANAGEMENT AREA

To get there, drive three miles north from Fairfield on Highway 89, or 10 miles south from Choteau on Highway 89. Up to 150,000 snow geese may be present during spring and fall migrations. Best times are late March to early April in the spring, and late October to early November in the fall. Call 406/467-2646 or 406/454-3441 for additional information.

BENTON LAKE NATIONAL WILDLIFE REFUGE

To get there, just north of Great Falls, turn off U.S. 87 onto Bootlegger Trail (Secondary 225) and follow it approximately 12 miles to the refuge entrance on the left side of the road. Up to 10,000 snow geese may be present during spring and fall migrations. Best times are late March to early April in the spring, and late October to early November in the fall. Call 406/727-7400 for additional information.

BOWDOIN NATIONAL WILDLIFE REFUGE

To get there, follow U.S. 2 east of Malta for about one mile, then drive east on old US. 2 for about six miles. Up to 2,000 snow geese may be present during fall migration. Best time is late October to early November. Call 406/654-2863 for additional information.

MEDICINE LAKE NATIONAL WILDLIFE REFUGE

To get there, drive east from Wolf Point on U.S. 2 for 47 miles to Montana 16. Turn north on Montana 16, which runs through the west end of the refuge. Up to 5,000 snow geese may be present during fall migration. Best time is late October to early November. Call 406/789-2305 for additional information.

PHILLIPS' WOOD DUCKS WIN

by WILLIAM PHIPPEN

A STRIKING RENDITION of three wood ducks, painted by Thompson Falls artist Craig Phillips, has been selected to grace Montana's state waterfowl stamp for 1992.

Phillips' painting of wood ducks, the subject for this year's competition, was chosen from 26 other entries by a panel of judges in Helena last November.

Paintings by Mark Perry, Manhattan, and Alan Snell, Helena, placed second and third, respectively. Entries by Zee Huang, Hamilton; Robert Kercher, Great Falls; Ron Jenkins, Charlo; and Joe Thornbrugh, Victor, received honorable mention.

Phillips, who grew up in a small farming town in northern California, said some of his first memories were of drawing, hunting, and fishing. "Believe it or not," he said, "the first duck I ever shot was a drake wood duck when I was 12." In the 25 years since that cold, November day, Phillips has hunted and fished most of the western states, Canada, and Alaska. A sketch pad and camera have accompanied him on all but a few of these journeys.

"For my painting this year, I worked from a pair of mounted wood ducks I own and from photos I've taken over the years," Phillips continued. "I also went out behind the studio and drug in an old cottonwood log and used it for reference."

Having placed in the Montana competition three times in the previous six years it's been conducted, Phillips said his first-place finish in this year's competition was particularly satisfying. He explained: "I really enjoyed trying to capture the brilliant colors and variations of those colors the drake possesses. I believe, like many others do, that they are the most colorful duck in North America."

Since 1986, waterfowl hunters in Montana have been required to possess a state waterfowl stamp as well as the long-required federal "duck stamp." The 1985 Montana Legislature gave the Department of Fish, Wildlife & Parks authority to produce and sell a waterfowl hunting stamp and market related items. In 1990, more than 15,500 stamps were sold to Montana waterfowl hunters and 8,000 collector's stamps were sold throughout the country.

Proceeds from sale of the waterfowl stamps and related artwork are used exclusively to develop and enhance Montana's wetlands for the long-term benefit of waterfowl and other wildlife on cooperating private, federal, and state-owned lands.

Funding for these wetland projects, as in previous years, will be garnered through sale of the 1992 waterfowl stamp ($5) and a series of limited edition prints that range from $140 for a signed print and stamp to $755 for the Executive Edition Print—a numbered and signed color remarqued print with a stamp and 24k gold-plate medallion embossed with Phillips' painting. Orders for the 1992 waterfowl stamp prints can be placed through many art galleries in Montana.

First place—Craig Phillips

Jeff Herbert, statewide waterfowl

coordinator for FW&P in Helena, said the waterfowl stamp program continues to focus on habitat efforts that will improve the waterfowl production potential of Montana wetlands and associated upland habitat. "We are generally emphasizing work on small wetland development, dike repair, upland vegetation management, island construction, and improvement of water delivery systems," he said. "These efforts will benefit not only the waterfowl resource, but also a wide range of other wildlife species."

In many cases, Herbert noted, these projects have been cooperative efforts involving both the public and private sectors. Almost half the construction projects scheduled for this year involve cooperation with the U.S. Fish and Wildlife Service's Private Lands Program. Duck stamp funds will be funneled directly to Ducks Unlimited to cost-share work on several projects in

Montana under its U.S. Habitat Program. In addition, six new projects scattered across the state will be submitted to DU for funding under the organization's MARSH (Matching Aid to Restore State's Habitat) program.

These habitat restoration efforts are critical to increasing waterfowl populations hit hard by a decade of drought during the 1980s. Montana's wetlands, Herbert explained, can be extremely productive with a little bit of cooperation from Mother Nature. "By increasing the number of wetlands and improving the quality of existing wetlands and their surrounding vegetation," he said, "Montana can make a significant contribution to those migratory bird populations that originate from these areas. Montana's Waterfowl Stamp Program is playing an important role in these conservation efforts."■

Second place—Mark Perry

Third place—Alan Snell

JOSEPH H. BAILEY, NATIONAL GEOGRAPHIC SOCIETY

A ceremony in the White House Rose Garden recently honored Project WILD, a national environmental education program. Receiving the 1991 President's Environment and Conservation Challenge Award for Education and Communication from President George Bush is Dr. Cheryl Charles, national director of Project WILD.

PROJECT WILD EARNS NATIONAL AWARD

Project WILD, the national conservation and environmental education program administered in Montana by the Department of Fish, Wildlife & Parks and the Office of Public Instruction, has received one of three 1991 President's Environment and Conservation Challenge Awards for Education and Communication.

In bestowing this honor, President George Bush recognized Project WILD as "an organization that best exemplifies the cooperative, innovative spirit of the new environmental era in the area of education and communication."

Since 1984, Project WILD has provided conservation education materials and workshops to more than 3,600 educators in Montana. In turn, these educators have used Project WILD materials and instructional strategies to teach more than 60,000 Montana students about wildlife, the importance of habitat, and the responsible actions people can take to protect the quality of our environment.

The program is implemented by 25 volunteer trainer/facilitators who assist Fish, Wildlife & Parks and the Office of Public Instruction in conducting workshops for educators statewide.

FANTASTIC COMEBACK OF THE AMERICAN WILD TURKEY

The wind chill was pushing 70° below zero, and drifting snow was swirling in cyclones as we sat in our pickup waiting for a flock of wild Merriam's turkeys to come into a grain-baited field near Broadus.

On that late January afternoon, we were in position to cannon-net some turkeys that were part of a population that had built up to around 200 birds and was causing depredation problems. Despite the severity of the weather, it was a perfect day for trapping, and the turkeys fully cooperated.

With a gusty wind stirring the snow, turkeys materialized out of an adjacent wooded area and sprinted into the baited area like cats to catnip. When we determined that about 80 birds were in range, we activated the firing circuit from the pickup and a large nylon mesh net exploded outward and over the feeding birds.

Then the work began. We had captured 65 turkeys—we then had to untangle them from the net, age and sex them, and place them in burlap bags. Their destination was the Missouri River bottomlands near Culbertson.

As we worked in the bitter cold, our fingers numbed and worked about as well as wooden clothespins. We still managed a grin when one of the crew mentioned that the stature of a man was measured by how much he could smile when Mother Nature was beating him over the head with an icicle.

These live-capturing programs are responsible for the turkey's spectacular success in Montana and elsewhere. Wild turkeys now inhabit 49 states (Alaska is the exception), including 10 states outside their ancestral range. Because of the dramatic increase in wild turkey populations, 46 states now offer hunting.

Combined population estimates nationwide show wild turkey numbers between 2.8 million and 3.1 million birds. That's quite a comeback, considering that the wild turkey had disappeared from the New England states and a few others by the turn of the century. Its numbers hit a low of between 20,000 and 30,000 birds nationwide by the early 1940s.

During the 1950s and '60s, state fish and wildlife departments and university researchers undertook wild turkey restoration efforts. Concerned sportsmen and women assisted.

When the Montana Department of Fish, Wildlife & Parks decided to introduce turkeys into Montana, it selected the Merriam's as the most likely to achieve success. In 1954, department biologists introduced 13 Colorado birds into the Judith Mountains of central Montana. In 1955, they released 18 turkeys from Wyoming into the Long Pines area of southeastern Montana. They also used Wyoming stock in the Ashland area of southeastern Montana in 1956 and '57 when 26 birds were released. This was the last time stock from outside Montana was transplanted. Subsequent trapping and relocating distributed turkeys through numerous sites in Montana.

During early restoration efforts in eastern states, wildlife biologists soon discovered that game farm or pen-raised "wild" turkeys did not have the vital capabilities to survive in the wild. They were not self-sufficient, had lost the wariness necessary to survival, and weakened existing flocks.

The subsequent mingling of pen-raised birds with purebred wild turkeys may have

caused pollution of the gene pool as well as introducing poultry diseases which were deadly in wild flocks. Over 30 years ago, wildlife agencies learned that the only way to establish huntable wild turkey populations was to move wild-trapped birds into unoccupied habitats because the pen-raised birds couldn't establish suitable populations.

Like many hard-earned lessons, it took the loss of thousands of game farm birds throughout the country before it finally sank in that pen-raised birds couldn't establish suitable populations.

When the 1992 spring gobbler season opens in April in designated areas of Montana, about 2,600 hunters will take to the field in pursuit of a bearded tom. Some excellent hunting opportunities will be waiting for them. Spring turkey hunting continues to grow more popular each year, and the reason lies in the sport's challenge. To outwit a crafty boss gobbler on his home turf is considered quite an accomplishment in even the loftiest of sporting circles.—*Ken Walcheck, Region Seven (Miles City) information officer*

Career Forester Named Boone and Crockett Professor

The current director of the U.S. Forest Service's New Perspectives Program has been named Boone and Crockett Professor of Wildlife Biology at the University of Montana.

Hal Salwasser, whose salary will be paid by the Boone and Crockett Club, will begin his new job in September 1992, according to Sid Frissell, dean of the School of Forestry. Salwasser will teach courses in wildlife biology and conservation and develop conferences and workshops. He'll also oversee research at the club's 6,000-acre Theodore Roosevelt Memorial Ranch, which lies about 15 miles west of Dupuyer.

Hal Salwasser

"This is a very significant program for the School of Forestry," Frissell says. "Salwasser's experience with the Forest Service and his strong professional reputation will allow him to make significant contributions to North American conservation issues."

Based in Washington, D.C., Salwasser has headed New Perspectives since 1990. The program focuses on research, development, and multiple-use management of ecosystems. He has held three other Forest Service positions in Washington: deputy director of wildlife and fisheries, natural resources senior analyst for the President's Commission on Americans Outdoors, and national wildlife ecologist. Among his many articles are those on conserving biological diversity, preserving endangered species, and integrating wildlife into the managed forest.

The Boone and Crockett Club, founded a little over a century ago by Teddy Roosevelt, is the country's oldest conservation organization. It sponsors graduate-level wildlife research, promotes conservation, and encourages wildlife education for both hunters and non-hunters. In addition, the group is the official keeper of statistics on rifle-hunted North American big game.—*Carol Susan Woodruff, Office of News and Publications, University of Montana*

Wildlife Law Enforcement: A Changing Field

Wildlife law enforcement aids and techniques have progressed markedly during the past few years, and they are being used to protect Montana's wildlife resources.

An item as basic as a carcass thermometer can help to determine the approximate time of an animal's death, which can be considered circumstantial evidence in court. A micrometer that measures a deer's pupils can also determine when an animal died.

"When an animal dies, its pupils will completely dilate within 15 minutes," says Jim Kropp, warden sergeant for the Montana Department of Fish, Wildlife & Parks in Bozeman. "Over time, the pupil then begins to constrict at a predetermined rate."

FW&P operates its own laboratory at the Region Three office in Bozeman, but law enforcement officers also have access to the federal fish and wildlife laboratory in Ashland, Oregon—the first full-service wildlife crime lab in the world. At the $3.5-million lab, blood tests exist that can determine the species of an animal that died 5,000 years ago. Scientists at the lab can examine hair, blood, horns, antlers, or material from an animal; by DNA and chromosome matching, they can tell from which species the sample came.

"The people at the Oregon lab are available as witnesses to provide expert testimony," Kropp said. "However, we were able to use our Bozeman lab to identify the species, age, and sex of a grizzly bear which we believed was illegally taken in the Absaroka-Beartooth Wilderness."

Wildlife Lab Supervisor Keith Aune explained that he and his staff examine the color and scale patterns of wildlife hair and the center portion of the hair strand under a microscope. "We have collected enough black and grizzly bear skulls that we can determine the sex and species even if we have only a partial skull," Aune said. "We are studying other determinations, including skeletal measurements and examination of femur bones, that will also help us in identifying the species, age, and sex of animals."

Today's game wardens have many other tools at their disposal. For example, did you know that a pheasant rooster, regardless of age, will measure more than 9mm across the breastbone and that all hens will measure 9mm or less. Wardens can use this information when checking skinned or processed pheasant carcasses.

A lead detection kit exists which can determine whether an animal has been shot with a high-powered rifle or with an arrow. When game wardens check game during the archery season or at archery-only hunting areas, they can use the kit as a field test. If they confiscate a carcass, they can then have it x-rayed at the FW&P lab for positive identification of lead fragments.

Today, much enforcement work is accomplished with the aid of computers. Since 1989, when the Montana Legislature authorized FW&P's use of Montana income tax files to match

At the FW&P wildlife laboratory in Bozeman, an extensive collection of skulls and other skeletal components aids law enforcement officials in identifying animal remains.

against resident hunting licenses, computers have become useful in checking those who claim to be Montana residents but are not.

"As far as retrieving information, Montana's computerized licensing system is clearly one of the most advanced in the northwestern United States," Kropp said. "We can combine all of our information with the Montana driver's license file. The computer will tell me if your brother in North Dakota used your phone number and address to buy a Montana resident license. It will tell me if you filed a Montana income tax return. If you didn't, that indicates you possibly do not live in Montana."

The residency investigation program has saved the state thousands of dollars by forcing non-residents to buy the proper licenses, Kropp said.

Montana also has access to the Rocky Mountain Information Network, a shared intelligence system among western states. This system helps law enforcement personnel gather information on suspects, particularly for possible violations of the Lacey Act (illegally transporting animals out of state).

So, times have changed in the field of fish and wildlife law enforcement. "We had primitive techniques of our own in the early days," says retired Warden Captain Bud Hubbard, a state game warden since 1961. "But nothing like today. We make a lot of cases today that would have been impossible 30 years ago."—*Bernie Kuntz, Region Three (Bozeman) information officer*

Last, year FW&P volunteers contributed almost 20,000 hours of work to the state parks system. Their activities included acting as park hosts, working as naturalists during the bald eagle migration, planting trees, and assisting park employees in a variety of ways.

NEVER UNDERESTIMATE THE VALUE OF A VOLUNTEER

Volunteers contribute enormously to Montana's state parks—from those who make sure required fees are paid to those who clean campsites and repair docks. Just how important they are and the economic magnitude of their contributions may surprise even those who have daily contact with them.

Results of a survey conducted by the department's Parks Division from November 1990 through November 1991 show that approximately 225 volunteers contributed over *19,500 hours of service*. That means a cost benefit to the parks system of almost $90,000 (based on the lowest hourly wage at which they might be paid if they were on the division's payroll).

Their efforts benefited parks statewide. In the Helena area, for instance, 119 volunteers contributed 8,090 hours, worth an estimated $37,000, in acting as hosts at area parks, working as naturalists during the eagle migration at Canyon Ferry Dam, planting trees, as well as providing other assistance.

In Kalispell, 21 volunteers contributed another 5,397 hours of work worth an estimated $24,700 in helping state parks managers efficiently operate and maintain the state's financially strapped park system.

"The value of these volunteers to our parks cannot be overestimated," said Doug Monger, assistant administrator of the Parks Division in Helena. "When you look at the funds these volunteers have saved the division for use in other aspects of operation and upkeep—as well as the genuine enthusiasm they have for the welfare of the system—you can see why all of us, including parks users, owe them our heartfelt thanks."

MONTANA'S MIDGET MAMMAL:

THE SHREW

A shadowy form the size of my index finger darts out from under the ice ledge and casts itself into the freezing waters of a Montana stream. Surely, whatever it is soon will be nothing but another chunk of ice clattering downstream. But wait. A bedraggled silver clump of fur claws up on the bank with a snail clamped between its teeth. It drops the snail and combs water from its fur with dexterous hind toes.

Once dry, the water shrew makes short work of the snail, devouring its meal with the zeal of a famished backpacker digging into a first bowl of ice cream after a long hike. For shrews, hunger is a driving force throughout a short life of not much more than a year. Even in winter and early spring, when many mammals are still in the lulling state of hibernation, shrews are stalking prey often twice their size. These animal midgets burn energy quickly. Their miniature hearts pound 160 times a minute.

Water shrews are just one of eight species of shrews that inhabit Montana: the masked shrew, Hayden's shrew, vagrant shrew, Merriam's shrew, dwarf shrew, Preble's shrew, and pygmy shrew. The last four, because of limited distribution and a lack of information about them, are listed by the state as species of special concern.

It's not easy to study shrews. After all, their raging metabolism doesn't leave much time for contending with researchers. Shrews live every moment with elusive vigor.

Yet scientists do have a pretty good idea of what shrews do in their short, bold lives. Just about this time of year, from early March and on through June, the adult female shrews have babies in litters of approximately five. In short time, the young leave the comfort and security of their nests to test out life as hunting, fighting adults. In fact, the female shrew born today may bring her first litter into the world only five months from now—if she lives that long.

Shrews are most likely to become a meal for a larger predator during those first couple months of life. Owls have a great liking for shrews. Often the insatiable appetite of a shrew will drive it to take risks a mouse would never consider. For instance, winter snow offers shelter for creatures that can burrow beneath the surface. But shrews will leave the safety of hidden tunnels and race along the open surface if they are hungry enough.

Hunger is a given with shrews. Consider eating three times your own weight each day—or having to eat every three hours to stay alive. That's a tough assignment, leaving little time for much else.

Each species of shrew in Montana fits a specific niche in the environment as neatly as a well-crafted puzzle piece. All shrews are members of the Order Insectivora. All are considered very primitive mammals on the evolutionary scale. All rely on keen senses of smell and hearing rather than eyesight. All are hungry, hyperactive (especially at night), and feisty predators. But each species has evolved over thousands of years the unique qualities needed for survival. While water shrews are threading their way through roots and creating grapefruit-sized nests from streamside debris, somewhere high in the Beartooth Mountains the dwarf shrew pounces on alpine spiders.

Watch for the tracks of shrews etched into the snow. You should see as many as three hops within a span of six inches. To discover shrews, you will need to scrunch down and think small. The best time to find shrews on the move is near sunrise or twilight, but if you're lucky, you might see a daring fellow flash across your path at noon as you wander down a forest path or across a meadow, or even in your own backyard.

Almost all of Montana's nongame wildlife species, including shrews, are watchable, if you know where to look. The Department of Fish, Wildlife & Parks Nongame Wildlife Program was created to learn more about the needs of species as ostentatious as the osprey and as small as the shrew. Informing Montanans about the wonders of nongame wildlife is another important part of the program.

You have the chance now to do something bold for shrews and other watchable wildlife—check out the box with the eagle on your state income tax form. Then make your mark in support of Montana's Nongame Wildlife Program.—*Deborah Richie, Watchable Wildlife interpretive specialist*

JOHN FRALEY

Thompson Chain of Lakes

A LINK TO NATURAL VALUES

by JOHN FRALEY

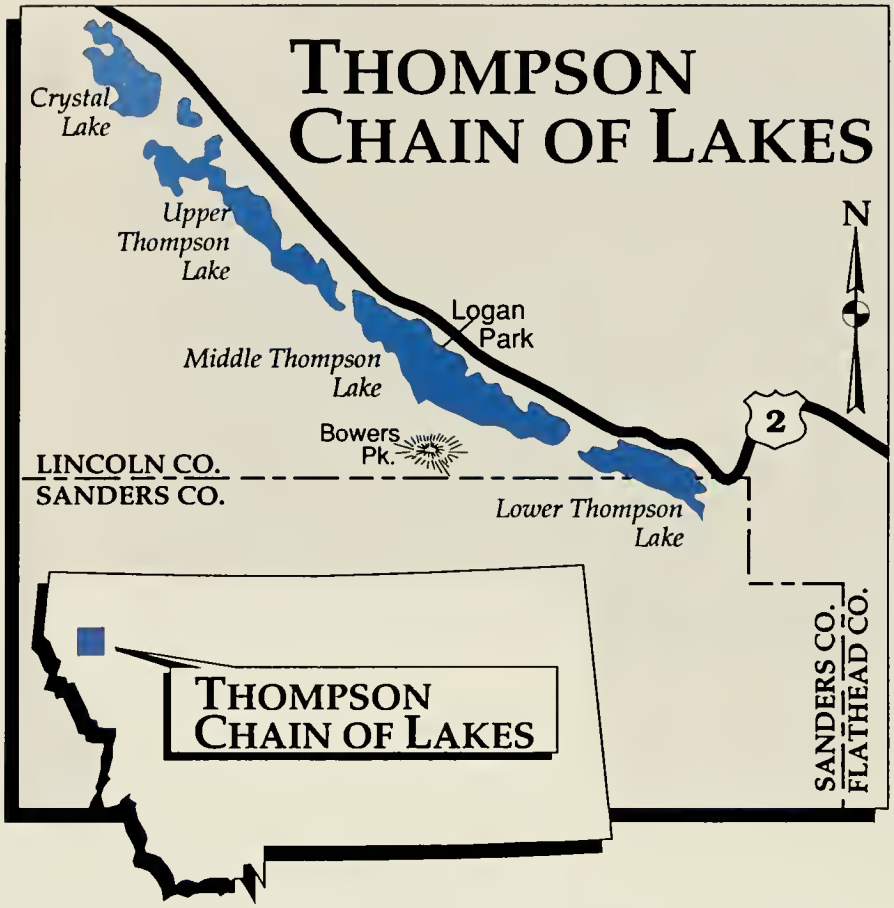
WHEN THE GLACIERS RETREATED about 10,000 years ago, they left a chain of lakes along the headwaters of a small river in northwestern Montana. Native Americans, including people of the Kootenai Tribe, buried their dead there and hunted the abundant wildlife. Less than two hundred years ago, explorer David Thompson, the first European to pass through the area, left his name on the river and lake chain.

Eventually, most of the land which came to be called the Thompson Chain of Lakes passed into the ownership of Plum Creek Timber Company and Champion International Corporation. In 1990, Champion International donated nearly 4,000 acres of land in this area to the Conservation Fund, a non-profit corporation specializing in land protection for natural values.

The donation, part of Champion's resource protection program, has been called a one-of-a-kind gift for Montana (see "Champion Donates Choice Wildlife Land" in the Sept./Oct. 1990 issue of *Montana Outdoors*). The gesture will ensure the area's protection for its scenic, historic, archaeologic, and recreational values.

Like many important events, the donation came about partly through chance. "I had been attending a meeting with Champion International on the future of the Thompson Chain of Lakes property," said Warren Illi, staff officer for the Flathead National Forest and president of Flathead Wildlife Incorporated, a conservation group. "When I got back to my office, I ran into Bob Kiesling, who was then director of the Montana and Wyoming offices of The Nature Conservancy."

Illi and Kiesling talked about the



possibility of a donation of the 4,000-acre property to preserve it for its natural and recreational values, a concept that had been discussed by various people before. Kiesling knew Andrew Siegler, chairman of the board of Champion International since they had served together on the board of The Nature Conservancy. Kiesling took the proposal to Siegler at the Champion International headquarters in Stamford, Connecticut. "That got the ball rolling," said Illi.

Members of Flathead Wildlife and others wrote to the Montana congressional delegation and asked for support for the project. Congressman Pat Williams saw the proposal as a good opportunity for Montana and checked with John Mumma, then the regional forester for the U.S. Forest Service's Region One. Mumma concurred.

The donation materialized in June 1990. The Conservation Fund paid one-third of market value to Champion International and the land was deeded to the Conservation Fund in December 1990.

The Conservation Fund leased the land, called Thompson Lakes State Park, to the state of Montana for two years. During this period, an environmental impact statement and long-term management plan will be prepared and presented to the 1993 Montana Legislature. The Conservation Fund will deed the land to the state if the Legislature funds development and management of the park or may explore other alternatives.

THE RESOURCE VALUES of the Thompson Chain of Lakes are impressive. The land extends for 15 miles along U.S. Highway 2 about midway between Kalispell and Libby. It includes more than 20 lakes and ponds including portions of 1,328-acre McGregor Lake on the southeastern end and 238-acre Loon Lake on the northwestern boundary. The Thompson and Fisher rivers connect several of the lakes.

The donated land includes 26 miles of lake frontage, most of it ideal for public recreational use. Old-growth stands of Douglas-fir and western larch still exist.

The area has been called one of the finest lake and water complexes in Montana. Most of the lake shores are undeveloped. Elevations average about 3,700 feet and provide excellent habitat for white-tailed deer, mule deer, moose, elk, and many species of birds and smaller mammals. Loons and great blue herons are common.

The lake chain is known for its fishing. Over 3,400 acres of water surface support 12 species of game fish, including westslope cutthroat trout, rainbow trout, lake trout, kokanee, largemouth and smallmouth bass, and yellow perch. The department regularly stocks 10 of the lakes.

Camping is popular and visitors include Montanans from both sides of the Continental Divide, Canadians, and people from the West Coast traveling to Glacier National Park and other attractions. Archaeological sites are another important feature.

FW&P and the U.S. Forest Service have established a citizen Advisory Council to help develop management guidelines for this diverse property. The council is charged with guiding the development of the management alternatives as well as fund raising.

"Part of the funding for the management plan must come from private donations," said Marty Watkins, parks operations specialist and the department's representative on the project. "The initial funding includes $10,000 challenge grants from the U.S. Forest Service and FW&P. These funds will be matched by $10,000 in contributions from private donors; only a portion of the private donations have been collected to date, and more donations will be needed for initial actions in the management plan and park development."

One of the most challenging tasks for the Advisory Council will be to review and recommend management guidelines. That won't be easy, considering the range of user groups and potential conflicts. "We need both recreational vehicle and more primitive kinds of campgrounds," said council member Jim Manley, who represents campers in the Libby area. "Dump stations and water are a must. We need to preserve

the area for the people to use."

Homeowners in the area are concerned that campgrounds and other developments might affect their quality of life. "Every year more and more people are discovering the area," said Roland Kline, council representative for the Chain of Lakes Homeowners Association. "We want to control development. If you don't, suddenly there's a big campground next to your house."

Mitch Richeal, Champion's representative on the Advisory Council, is concerned about waste management. "The waste problem needs attention now," said Richeal. "When we cleaned the area on Earth Day, we saw a lot of human waste and trash. People use the area extensively for camping. A few outhouses are available; some people have built their own out of plywood, but we need to do much more."

Another controversial management concern is cattle grazing. Leo Hargrave, representing the Thompson River Grazing Corporation on the council, is concerned that this traditional use may be threatened. "When the land was donated, we were informed that our grazing rights would be preserved," said Hargrave. "Grazing has been a legitimate use of the Chain of Lakes area for 50 years, and should be grandfathered in. For one thing, it helps reduce fire danger.

"People around the lakes complain about our cows on their lots. The feeling is that we shouldn't be there," Hargrave continued. "We've offered to fence property lines to help solve the problem. And grazing leases bring in $500 a year—that could be applied to recreation management."

Several Advisory Council members don't want to see unnecessary management controls placed on the area. "It should be managed as a recreation area, with a minimum of controls," said Loren Kujawa, who represents the Libby Rod and Gun Club. Kujawa is interested in preserving the values of the area and has compiled maps of trails and burial sites of the Kootenai Tribe.

"I like to hunt and fish," added Jim Manley. "I want to see those kinds of traditional uses continued."

Other recreational uses of Thompson Lakes State Park may prove difficult to balance. For example, many feel that water skiing should be restricted to the larger lakes and perhaps be limited to specific times of the day. Others debate user fees, camping fees, and overall development philosophy.

DAVE BOOKS

Mallards (above), loons, and great blue herons are among the many bird species inhabiting Thompson Lakes State Park.

The Advisory Council has prepared a questionnaire which includes these and other issues. Using the results of the survey and the environmental impact statement, the council will help guide the writing of a long-term management plan.

The Conservation Fund will make a decision on the fate of the Thompson Chain of Lakes area when the Advisory Council, FW&P, and the U.S. Forest Service complete the management planning process and present results to the Legislature. The area could be permanently deeded to the state of Montana, or some joint management scheme could be developed between the state and the U.S. Forest Service.

"The project is a great idea, but it must be done right," said Richeal. "The area has tremendous natural values. It should remain a place where you can take your kids and show them what an impressive forest and riparian area look like."

Watkins recognizes the challenge faced by the department, Forest Service, and Advisory Council in writing a management plan. "I'm optimistic that we'll find the right balance. I'd like to get people fired up about this project, and its possibilities. It's exciting to think about what the area could be for Montana."■

The Chain of Lakes Advisory Council is looking for private donations to help fund the management plan for the area. For more information, contact Warren Illi, Advisory Council chairman, at 406/755-5401, or Marty Watkins, state parks representative, at 406/752-5501.

The FERRET EXPERIMENT

by
ROSALEE
RICHARDSON

BLACK-FOOTED FERRETS (*Mustela nigripes)* are once again scurrying down prairie dog holes in search of a meal on the windswept plains of south-central Wyoming. This is a remarkable turn of events considering only 18 of these mink-sized members of the weasel family (Mustelidae) were known to survive worldwide in 1987. A successful captive breeding program initiated in 1986 by the Wyoming Game and Fish Department, in cooperation with the U.S. Fish and Wildlife Service (USFWS), has been responsible for giving the ferrets a new lease on life.

Since it was first described by John James Audubon and John Bachman in 1851, the black-footed ferret has been an enigma. Due to its nocturnal habits and secretive nature, it largely eluded the attention of early naturalists. As a result, most of what we know about black-footed ferret ecology and behavior has been learned only in the past 25 years based on studies of two remnant populations.

Until the 1920s, black-footed ferrets occupied an extensive range from southern Alberta and Saskatchewan throughout the Intermountain West to the southwestern United States and perhaps a small portion of Mexico. But broad-scale control of prairie dogs, upon which ferrets closely depend for food and shelter, along with land use changes, led to a rapid decline in ferret distribution and numbers. Diseases, too, may have played a role, since ferrets are highly susceptible to canine distemper, and prairie dog colonies are subject to outbreaks of sylvatic plague. Both of these diseases are believed to have been introduced to North America by European settlers.

By the late 1940s, the black-footed ferret was extremely rare, and only scattered records of individual specimens could be documented. In 1954, Victor Cahalane, writing in the *Journal of Mammalogy*, described all known recent specimens and suggested that ferrets were so rare that extinction was a very real threat. By the early 1960s, no ferrets had been seen for many years and the species was feared extinct. Then, in 1964, a small population was discovered in South Dakota. Some of the ferrets in this population had deformities and others had various kinds of cancer, suggesting prolonged isolation had resulted in inbreeding depression and reduced genetic vigor. Unfortunately, within a decade, this population had completely disappeared and many believed the species extinct.

Obviously, the black-footed ferret was in serious trouble. But an unanticipated event in the fall of 1981 gave new hope. A ranch dog near Meeteetse, Wyoming, finding competition for his food dish, chased and killed the only black-footed ferret anyone had seen in many years. This single specimen was proof that the species still survived.

Researchers soon discovered an isolated black-footed ferret population near Meeteetse living among several colonies of white-tailed prairie dogs (*Cynomys leucurus*). The population was estimated at 129 in 1984, with 15 to 35 breeding adults. By August of 1985, the population had declined substantially. Six ferrets were taken into captivity to start a captive breeding program, but they soon died of canine distemper. Canine distemper, which is 100% fatal to black-footed ferrets, had infected the population. Because the risk of extinction was so great, an additional 18 ferrets were brought into captivity in 1986-87 to serve as founder animals in a propagation program aimed at eventually reintroducing the species to the wild. The abrupt decline of the Meeteetse ferrets due to disease emphasizes the vulnerability of such populations to random environmental events that can lead to extinction.

Following the Meeteetse discovery, a concerted effort was made to locate any remaining black-footed ferrets in Montana.

LURAY PARKER © 1991 WYOMING GAME & FISH DEPT

Of 49 black-footed ferrets reintroduced to the Shirley Basin area of Wyoming in fall of 1991, 37 were fitted with radio collars so their activities could be monitored.

That effort was unsuccessful despite a reward offer of $5,000 and later $10,000 for discovery of a wild black-footed ferret in the state. The reward offer expired on December 31, 1990, with no ferrets having been found anywhere under the Big Sky.

The current black-footed ferret recovery program hinges on reintroduction of offspring from the black-footed ferrets taken into captivity in 1986 and 1987. In 1988, the USFWS revised and updated its black-footed ferret recovery plan. Revisions called for increasing the captive breeding population to 200 breeding adults by 1991; establishing pre-breeding season populations of at least 1,500 ferrets in 10 or more places in the wild; and encouraging the widest possible distribution of reintroduced ferret populations. Following achievement of the first part of the goal, 49 ferrets—32 males and 17 females—were reintroduced to the Shirley Basin area of Wyoming in fall of 1991 (more males were released because they are considered more expendable to the captive breeding program). Thirty-seven of them were radio collared so that their activities could be monitored.

"AS THE DRAMA IN OTHER WESTERN WATCHING

Snow-tracking and spotlighting surveys as of last November indicated that at least nine ferrets remained in the vicinity of the release sites, although several had dispersed up to 15 miles. Nine mortalities were documented. Four were killed by coyotes, one by a badger, and four others showed signs of dehydration and starvation. Fifty or more ferrets will be released annually for the next two to four years to augment the population.

AS A PRELUDE TO REINTRODUCTION, researchers in states throughout the black-footed ferret's historic range inventoried their remaining ferret habitat to identify potential reintroduction sites. Although approximately 2 million acres of the ferret's original range is still occupied by prairie dogs, much of this habitat is fragmented and incapable of supporting a viable ferret population. In Montana, researchers identified eight complexes of prairie dog colonies that appeared suitable for evaluation. Four sites that received a high rating in south Phillips County, Montana, were combined into a single, larger site. This area was selected as a potential release site by the Black-footed Ferret Interstate Coordinating Committee.

The black-tailed prairie dog (*Cynomys ludovicianus*) population in south Phillips County was inventoried and mapped in 1981, 1984, and again in 1988. When these data were subjected to guidelines developed by the USFWS, a complex containing 26,000 acres of prairie dog towns emerged as a potential black-footed ferret reintroduction site. Of this 26,000 acres, 12,300 acres is owned by the Bureau of Land Management (BLM); 5,800 acres is owned by the USFWS (Charles M. Russell [CMR] National Wildlife Refuge); 2,000 acres is owned by the state; and 5,800 acres is privately owned.

PHILLIPS COUNTY IS A SPARSELY POPULATED RURAL AREA dependent on farming and ranching for economic stability. As might be expected, the idea of reintroducing an endangered species was not enthusiastically received. The Endangered Species Act is viewed by many as a threat to traditional lifestyles and land uses. The mere mention of such species as the snail darter, desert tortoise, wolf, or spotted owl often elicits highly emotional responses. The endangered species program is viewed by many rural residents

LURAY PARKER © 1985
WYOMING GAME & FISH DEPT.

LURAY PARKER © 1991 WYOMING GAME & FISH DEPT.

Captive ferrets are reintroduced to the wild through special release cages.

LURAY PARKER © 1991 WYOMING GAME & FISH DEPT.

as a case study of what happens when the federal bureaucracy gets totally out of control.

During meetings with local landowners, three major areas of concern were identified. Mistrust of government topped the list. Next came the fear that prairie dog populations (the black-footed ferret prey base) would be allowed to expand unchecked. Last was the concern that presence of an endangered species would be used as an excuse to impose restrictions on lifestyles and agricultural operations in the future.

A working group composed of representatives of the Montana Department of Fish, Wildlife & Parks (FW&P), USFWS, BLM, and CMR was assembled and charged with the task of drafting a reintroduction plan that would be sensitive to these concerns. The results of this effort were released for public comment in October 1991.

The reintroduction plan's major thrust was summed up in its goal statement: "To promote the recovery and delisting of the black-footed ferret by reintroducing and establishing a free-ranging, cooperatively managed, black-footed ferret population in the North Central Montana Complex in a way that is compatible with existing local economies and lifestyles." The first task was to address the different agendas of the various landowners within the reintroduction area—particularly as they apply to prairie dog management. The draft plan did not consider private lands essential to the reintroduction effort, but it encouraged private landowners to participate. It proposed no restrictions on private land. Control of prairie dog towns on privately owned land was permissible within the context of the reintroduction plan.

A major factor influencing the decision to propose releasing black-footed ferrets in this area was the amount of federally owned land involved. The BLM assumed a leadership role when it addressed the issue of maintaining black-footed ferret habitat on lands under its control in a document entitled the "Judith, Valley, Phillips Resource Management Plan (JVP/RMP) Draft Environmental Impact Statement" (EIS). The preferred alternative was designed to protect existing black-footed ferret habitat while assuring local landowners that reintroduction would not affect the portions of their operations under BLM control.

With two management plans being developed along parallel tracks, the potential existed for a "Catch-22" loop—that is, each plan deferring the thornier issues to the other. This was avoided by working cooperatively to define roles and responsibilities and by ensuring that the two documents complement each other.

"ENDANGERED SPE
A COMPLEX AND

The BLM proposed maintaining (but not exceeding) the

LURAY PARKER © 1987 WYOMING GAME & FISH DEPT

Black-footed ferrets raised in captivity for later release are crucial to the ferret recovery program.

1988 prairie dog acreage of about 12,300 acres on lands under its control in the reintroduction area, and offsetting prairie dog acreage losses on private land with increases on adjacent federal land in areas where expansion is necessary. The JVP/RMP draft EIS stated there would be no loss of current grazing opportunities on BLM-administered grazing leases due to black-footed ferret reintroduction.

In 1988, the CMR National Wildlife Refuge harbored about 5,800 acres of prairie dog towns in the reintroduction area. Because of its status as a national wildlife refuge, the CMR will manage these towns as black-footed ferret habitat.

ENDANGERED SPECIES RECOVERY is a complex and difficult task, especially when a species has declined to the point where reintroduction is the only recovery method left. Historically, opposition to reintroduction, stemming from concerns about restrictions on federal and private activities, has severely handicapped its effectiveness as a management tool. To cope with this difficulty, in 1982 Congress amended the Endangered Species Act to provide for designation of specific populations of listed species as "experimental populations." Under the amended act, reintroduced populations established outside the current range but within the species' historic range may be designated as "experimental." Because such populations may be treated as threatened rather than endangered, managers have more discretion in devising management programs for them.

"IES RECOVERY IS DIFFICULT TASK...."

Additional management flexibility is possible if the experimental population is found to be "nonessential" to the continued existence of the species. Nonessential experimental populations located outside national wildlife refuges or national parks are treated as if they were only proposed for listing. The following restrictions apply: all federal agencies must establish conservation programs, and they must confer informally with the USFWS on actions likely to jeopardize the continued existence of the species. The draft reintroduction plan recommended this classification for the proposed south Phillips County area, with the final determination to be made by the Secretary of the Interior in cooperation with the Montana Fish, Wildlife & Parks Commission and directly affected parties.

To date, the draft plan has received little support from local residents. What support it has received comes from the realization that before any prairie dog control can occur on BLM-administered lands in south Phillips County, a black-footed ferret reintroduction plan must be adopted. Given a choice, however, most local residents would opt for control of prairie dogs without ferret reintroduction. Some outside interests, on the other hand, would probably prefer ferret reintroduction without prairie dog control. All parties will have to be willing to compromise if we are to accomplish the objective of black-footed ferret recovery.

The Wyoming reintroductions, because they are the first ever attempted, are highly experimental. It is hoped that the results will point the way to recovery of this critically imperiled species. As the drama in Wyoming unfolds, other western states will be watching anxiously. If we, collectively, can retrieve the black-footed ferret from the brink of extinction, it will stand as a shining testimony to our commitment and concern for preserving all forms of North American wildlife. ■

REMEMBER THE OTHER TWO-THIRDS

I have been reading your magazine for a number of years and thoroughly enjoy, for the most part, the content. Your most recent issue, January/February 1992, the Special Photo Issue, is the reason I'm writing. I have lived on both sides of the Continental Divide in Montana, but now I reside in Shelby. It goes without saying that I enjoy the beauty of all areas of our wonderful state. Unfortunately, your magazine always seems only to be concerned with western Montana and has a not-so-subtle bias against the areas of the state that don't possess mountains, mountain streams and lakes, grizzly bears, and other animals mostly associated with western Montana.

When I was first reading your latest issue, I thought it was a western Montana publication. It shows nothing of the plains, in almost all instances reflecting only scenes that one would associate with western Montana. A reader from out of state would never know that over two-thirds of our state is not represented. If you are working for a magazine named *Montana Outdoors*, please do not forget the other two-thirds of our state, unless you are willing to change the name of the magazine to *Western Montana Outdoors*.

I am sure people in Glasgow, Miles City, Glendive, Broadus, Plentywood, and Wibaux would appreciate recognition in *Montana Outdoors* and recognition that the areas surrounding their communities are also in the state of Montana. Try a trip over this way and you will find when Montana is referred to as the "Big Sky" state, the plains of eastern Montana are what best depict this.

There are wonderful people, beautiful areas, lots of wildlife, great fishing and hunting, and wide-open spaces. Your editorial bias in favor of western Montana is misplaced. If you cannot get anyone to leave western Montana to photograph our area, I would be happy to give you names of some wonderfully talented photographers who live on the plains.

Your last issue was incredibly beautiful, a job well done, but it does not depict the entire state of Montana.—*Linda A. Lee, Shelby*

• *Thanks for the compliments on our Special Photo Issue. We agree that eastern Montana possesses great beauty, wonderful people, abundant wildlife, and superb hunting and fishing; we also agree that we don't showcase it as much as we would like with our photos (although we would argue that most of the wildlife species featured in the recent photo issue do inhabit at least portions of eastern Montana—e.g., mule deer, elk, beaver, red fox, coyote, porcupine, ferruginous hawk, saw-whet owl, bald eagle, white pelican, white-tailed jackrabbit, ring-necked pheasant, etc.). The reason we don't feature more eastern Montana landscapes is that most of the photographers who contribute to* Montana Outdoors *live in the western third of the state and take the majority of their pictures there. We'd* love *to hear from more eastern Montana photographers—so how about helping us out? Please write Bev Veneziano,* Montana Outdoors, *930 Custer Avenue West; Helena, MT 59620 for information on submitting photos, or call her at 406/444-2474.*—Editor

"SHELTER FROM THE STORM"

I wish to thank Bernie Kuntz for writing "Shelter from the Storm" in the September/October 1991 issue. That feature carried a great deal of personal meaning for relatives, friends, and me.

I am presently a resident of Pennsylvania, but will one day call Montana my home. I have a cabin at Tom Miner Basin, just across the road from Dome Mountain. I visit my mountain retreat once or twice yearly and make it a point to climb a mountain each trip. This past June, Dome Mountain was the challenge. Two friends and I reached the summit at noon. It was a leisurely five-hour hike with a beautiful panorama of the area.

This trip to Montana was special beyond the usual. My father had been coming to Montana with us since 1986. This trip was to be his last venture West (he died in December). He had so much love for Montana's "Big Sky" that his last request was that he wanted his ashes to rest at our little mountain retreat. This past June, six friends and relatives honored his request. We put up a lodgepole pine flagpole to fly the flag given us by the U.S. Air Force. We commented, "Not even the President of the United States can claim a more beautiful resting place."

Because of Mr. Kuntz' article and this coincidence, Dome Mountain will always carry greater meaning as "Shelter from the Storm."—*Mary Sutton; Holland, Pennsylvania/Tom Miner Basin*

COOL'S POINT OF VIEW: UPLIFTING

I read with interest the inside cover of your state's September/October 1991 magazine, "Our Point of View," by K.L. Cool. It was *uplifting*! That's the best way to describe what's taking place over in your state in regard to hunting and the sportsmen and the recognition of a heritage that's been really kicked around as of late.

You've taken quite a stand on the issue, and I salute you for it. If it would only catch on around the whole country in such a manner, it would be fantastic. We're heading in the right direction and we just have to keep at it. What your state is doing with a week in recognition of hunting heritage, wildlife, lands, and conservation efforts is a boost to us all who keep plugging away in similar fashion.—*Dave Brower; Zeeland, Michigan*

PHOTO ISSUE WOWS 'EM AGAIN

The January/February magazine is the best ever to show off southwestern Montana. We have a summer home up Highway 1 between Anaconda and Georgetown Lake—and we need four of these magazines to help us brag about that part of Montana.

Like kids waiting for Christmas, we will be anxiously waiting for our yearly four months up there under the trees and beside the stream that lulls us to sleep nightly.—*Mr. and Mrs. Dee McMillan; Perris, California*

Book Reviews

ALDO LEOPOLD'S WILDERNESS: SELECTED EARLY WRITINGS BY THE AUTHOR OF A SAND COUNTY ALMANAC, edited by David E. Brown and Neil B. Carmony, Stackpole Books, P.O. Box 1831, Harrisburg, PA 17105; 1990, 250 pages, hard cover, $18.95.

As editors David E. Brown and Neil B. Carmony point out in the introduction, millions of people have come to know Aldo Leopold through the lyrical essays contained in "A Sand County Almanac." Yet, despite the fact that Leopold published more than 300 articles in a variety of periodicals during his lifetime, few of them are readily available to his still-growing army of admirers. To help rectify this situation, Brown and Carmony have pulled together a sampling of Leopold's early writings from diverse magazines, journals, and bulletins, and added "Editors' Notes" at the end of each to explain its significance and the circumstances surrounding its publication.

The first series of articles falls under the general heading, "The Road to Game Restoration: Game Hogs, Varmints, and Refuges." These articles, published between 1915 and 1919, show a young Aldo Leopold's concerns with game protection and hunting ethics. Graduated from Yale University with a degree in forestry in 1909, Leopold soon joined the fledgling U.S. Forest Service, in Arizona Territory. Promotions came quickly, and in 1912, shortly after New Mexico attained statehood, he was appointed supervisor of the Carson National Forest. A year later he became critically ill with a kidney infection and had to step down as forest supervisor. Despite the suffering his long convalescence must have caused, it also allowed him the opportunity to read widely and broaden his thinking on the problems confronting the arid lands of the Southwest. His early writings reflect concern for the dwindling wildlife populations of the region brought on by overgrazing, poaching, and inadequate wildlife laws. An ardent hunter, Leopold instinctively understood that the fate of wildlife depended on educating sportsmen and mobilizing them in the fight for wildlife conservation.

The second part of the book, called "Game Management: A New Science," contains articles that trace the evolution of Leopold's ideas on wildlife conservation from 1918 to 1930. Like most conservationists of the early 1900s, Leopold believed that predator control was essential to restoring and protecting wildlife populations; later, however, he came to recognize it as a two-edged sword that ultimately diminishes the natural diversity he so strongly believed in. By the time he left the Southwest in 1924, Leopold had become a strong advocate for wildlife research and biologically based hunting regulations.

The third section of the book, "The Big Picture: Understanding the Importance of Land Health," includes some of Leopold's early (and partially erroneous) observations on ecological change, as well as a more mature Leopold's recognition that land is a complex, interacting community of soil, water, plants, and animals that needs to be treated with love and respect. He had come to recognize the full extent of the problems created by many decades of overgrazing in the Southwest, and was years ahead of his time in calling for a new system of values—a land ethic—that would be vital to restoring damaged ecosystems to full productivity.

This book reveals Aldo Leopold not only as a talented and forceful writer but as a wildlife biologist with keen powers of observation. Through these early writings, we see Leopold as more than the philosopher whose intellect shines so brightly in "A Sand County Almanac"; we see Leopold the young bureaucrat who could remain loyal to the Forest Service even though his relationship with it was sometimes stormy; we see Leopold the activist who recognized the need for organizing and motivating people in positive directions; and we see Leopold the hunter and outdoorsman, whose constant quest for scientific knowledge extended even to the game birds and animals he shot on his days afield.

All students of Leopold and admirers of his writing will find much of value in this book. The editors' comments add thoughtful insights and perspectives and the historical photos provide an interesting glimpse into Leopold's days in the Southwest.—*Dave Books*

BANNACK: CRADLE OF MONTANA, text and photography by F. Lee Graves, Montana Magazine, American & World Geographic Publishing, P.O. Box 5630, Helena, MT 59604; 1991, 64 pages, paper, $8.95.

A wonderful blending of factual history, stories, and pictures of the past and present make this book enjoyable fireside reading. Like the spider spins a web, the author complements the journey back in time by carefully traveling along known paths of history, then adds an interesting pattern to his final product with a side turn here and there of delightful stories and priceless pictures (*Montana Outdoors* readers have seen Graves' photography in the magazine's pages). Without a doubt, you feel as though you have been hurled back in time and then, ever so gently, brought back to the present.

So much of Bannack's past, even its earliest beginnings, were restless and extreme. Its geology, weather, and first inhabitants seemed to embrace a sense of change and hardship. This continued throughout the time of white settlement, the quest for gold, and the bloody reign of the road agents. It was as if her destiny had been decided long ago. They all lived life on the edge until another spirit was heard from...one who saw peace and tranquility as the epitaph on the headstone of this once wild, raucous town.

The vigilantes, masons, and "decent folk" soon turned Bannack into a hard-working mining community, encompassed with gentleness and care. They stayed as long as they could and left a part of our Montana history to be forever relived by their experiences and insight.

If you have never been to Bannack State Park, read this book first, and then take it with you when you visit. It will open a lot of doors for you. If you have been to Bannack many times, like myself, this book will create all over again the magic of returning to a place where you wish the buildings could talk and you feel like Henry Plummer is watching you. It gives me goose bumps just thinking about it!—*Debbie Cheek, field support supervisor, Parks Division, Helena*

CONTRIBUTORS

• **William Phippen's** by-line appears at the top of two major pieces in this issue. The first announces results of the 1992 waterfowl stamp contest: "Phillips' Wood Ducks Wins." Craig Phillips, a Thompson Falls artist, edged out 26 entries for the honor. In the six years the contest has been conducted, Phillips has placed three times, so his first-place finish in this year's competition was particularly satisfying. The article reveals some interesting information about the artist's background; it also reminds you that funds from the waterfowl stamp program are used exclusively to "develop and enhance Montana's wetlands for the long-term benefit of waterfowl and other wildlife on cooperating private, federal, and state-owned lands." Turn to page 8 for Phippen's article, as well as photos of Phillips' winning entry and the art that placed second and third.

It shouldn't surprise anyone that the Department of Fish, Wildlife & Parks would want all Montanans to partake of the largely unmatched recreational opportunities our beautiful state has to offer. But as Phippen writes in his second contribution to this issue, "...for an increasing number of Montanans, disabilities sometimes make participating in the state's recreational abundance difficult or impossible." That's where "Crossing the Barriers" comes in. It's a major step for FW&P, and it addresses the needs and rights of the department's constituents with disabilities. Already, at all FW&P regional offices, the department's headquarters in Helena, and over 40 department-administered sites around the state, parking areas, rest rooms, and trails have undergone accessibility improvements over the past two years. For more details on the positive steps the department is taking in "Crossing the Barriers," turn to page 31. Phippen has been the Helena headquarters information officer since 1984. He has attended disability awareness sessions and developed plans for implementing changes in his division, Conservation Education.

"Anyone who thinks outdoor recreation isn't important to persons with disabilities should talk to Joan Marie Connor." That's the opening of **Deirdre Boggs'** accompanying article, "Milestone on the Bitterroot." Boggs describes two trips Connor, a wheelchair user, took on the Bitterroot River. She notes that a fishing and boating access that FW&P finished at Woodside Bridge makes it a lot easier for people with disabilities to experience the sights and sounds of the river—either by boat or from shore. She quotes Connor: "I love the new access. It lets me experience the river so much more easily than before. I hope Woodside is the starting point for the other projects we need." Boggs has been rafting on Montana and Idaho rivers for about 10 years. She is working on an M.A. in journalism at the University of Montana.

• When glaciers retreated some 10,000 years ago, they left a chain of lakes along the headwaters of a small river in northwestern Montana. That area is today called the Thompson Chain of Lakes and it is truly "A Link to Natural Values." Acquisition came about through a land donation by Champion International, and it ensures the area's protection for its scenic, historic, archaeologic, and recreational values. Values such as more than 20 lakes and ponds, including portions of McGregor and Loon lakes. Such as 26 miles of largely undeveloped lake frontage. Such as old-growth stands of Douglas-fir and western larch. Such as excellent habitat for white-tailed deer, mule deer, moose, elk, and many birds and smaller mammals. Such as water supporting 12 species of game fish. As **John Fraley** writes, a citizen Advisory Council has been formed to help develop management guidelines. That won't be easy, Fraley notes, because of the range of user groups and potential conflicts. Turn to page 15 and discover for yourself the potential of the Thompson Chain of Lakes. Fraley is the department's information officer in Kalispell.

• As **Rosalee Richardson** writes, "Black-footed ferrets...are once again scurrying down prairie dog holes in search of a meal on the windswept plains of south-central Wyoming. This is a remarkable turn of events considering only 18 of these mink-sized members of the weasel family...were known to survive worldwide in 1987." But endangered species recovery is a complex and difficult task. Richardson reveals that a reintroduction plan for Montana's Phillips County has received little support from local residents. Some local residents would opt for control of prairie dogs, the ferret's primary food, without ferret introduction. Others, Richardson conjectures, would probably prefer ferret reintroduction without prairie dog control. Compromise is the name of the game in "The Ferret Experiment." Richardson is a volunteer at the Charles M. Russell National Wildlife Refuge. A recent graduate of Montana State University with a degree in biology, she plans to enter a graduate program in wildlife, emphasizing threatened and/or endangered species and their habitats. Richardson thanks Dennis Flath, Ron Stoneberg, Ron Crete, John Grensten, and Rich Reading for their support and contributions to her article. It begins on page 18.

• The Blackleaf Wildlife Management Area (WMA) offers quite a "Lands Legacy": winter range for elk and mule deer; summer habitat for black and grizzly bears; big game, upland bird, and waterfowl hunting opportunities; the chance to view many species of wildlife—from big game to songbirds and raptors. And, as **Gary Olson** notes, it's also the site of an exciting experiment. Using results of a long-term vegetative sampling project, a livestock grazing plan was designed for the WMA to meet the needs of the plant communities, wildlife, and the recreational public. Initial results of the Blackleaf grazing program are very encouraging. It holds "promise for future use of a very valuable management tool." Olson is a wildlife biologist for the department, working out of Conrad. "Beefing Up the Blackleaf" begins on page 27.

• *Montana Outdoors* thanks the following photographers for their contributions to this issue: **Joseph H. Bailey**, National Geographic Society; **Pete** and **Alice Bengeyfield**, Dillon; **Kristi DuBois**, **Alan G. Nelson**, and **Rodney Schlecht**, Great Falls; **Harry Engels** and **Mike Logan**, Helena; **Jim Mepham**, East Glacier; **LuRay Parker**, Wyoming Game and Fish Department; and **Barbara Thomas**, Kalispell. Thanks also to the following contributors who work for the department: **John Fraley**, Kalispell; **Craig Jourdonnais** and **Mary Ellen McDonald**, Helena; and **Gary Olson**, Conrad. ■

KRISTI DUBOIS

BLACKLEAF WILDLIFE MANAGEMENT AREA

BEEFING UP THE BLACKLEAF

by GARY OLSON

LYING in a foothill zone east of the Continental Divide, the Blackleaf Wildlife Management Area (WMA) offers winter range for elk and mule deer, summer habitat for black and grizzly bears; big game, upland bird, and waterfowl hunting opportunities; plus the chance to view many species of wildlife—from big game to songbirds and raptors.

Overlooked by the Sawtooth Range of the Rocky Mountains, the Blackleaf lies in northwestern Teton County. Fifteen miles west of Bynum on U.S. Highway 89, the Blackleaf is also 85 road miles northwest of Great Falls.

Topography varies from flat, sub-irrigated meadows and marshes to rolling hills to high timbered and rocky outcrops on the west boundary of the property. Several small streams run from west to east. Elevation varies from 4,300 to 6,700 feet.

The 11,107-acre wildlife management area was purchased to provide winter and spring range for elk and mule deer and to prevent elk depredation on nearby private ranches. Other considerations included seasonal needs of

KRISTI DUBOIS

Today's Blackleaf Wildlife Management Area comprises 11,107 acres of meadows, marshes, rolling hills, timbered slopes, and rocky outcrops. It is bordered on the west by the Lewis and Clark National Forest and on the other boundaries by privately owned ranches.

white-tailed deer and grizzly and black bears. In addition, seasonal access to public lands for hunting and other forms of recreation was considered desirable along this portion of the Rocky Mountain Front. Hunting continues to dominate recreational use of the WMA and adjacent public lands.

Historical use of the Blackleaf area by Native Americans is well-known, but poorly documented. A battle between the Flathead and Piegans (Blackfeet) is said to have occurred in 1859 at a site southwest of Antelope Butte along a well-marked travois trail. Rock mounds and numerous tipi rings mark the site today, but little is known about the trail or the battle.

Ownership dates to the late 1800s and early 1900s after unreserved public lands were opened to settlement. The first white man lived in the Blackleaf area in the 1870s and filed on water rights. The first ranch was established in the early 1890s, and settlers built a public school in 1898. Elderly locals recall the Blackleaf Literary Society, boasting 35 members from 1889 to 1910.

The railroad into Choteau, about 30 miles southeast of the WMA, was completed in 1914 and with it came numerous hardy souls willing to risk the East Front's harsh climate. A flurry of homesteading activity from 1915 to 1920 resulted in 10- to 40-acre tracts being plowed and planted to small grains. The area even sported a truck garden to keep the local community in fresh vegetables.

Homesteaders trying to farm along this stretch of the front soon experienced the reality of the weather: severe jumps from one temperature and moisture extreme to another, fueled by constant winds. "Proving up" on many homesteads in the area was difficult, and the number of homesteaders dwindled rapidly. After 1925, homesteading was mostly replaced by large livestock operations, with cattle and sheep ranching dominating the agricultural scene.

Parts of the Blackleaf WMA were once the Blackleaf Game and Bird Preserve, created by the Montana Legislature in 1923. Local ranchers pushed for the preserve to help re-establish elk, deer, and upland game bird populations. By 1933, residents were reporting they had seen elk for the first time in "many years." The preserve was abandoned in 1953, again at the request of local ranchers who believed that some harvest was necessary to control growing big game populations.

TODAY'S BLACKLEAF WILDLIFE MANAGEMENT AREA comprises 10,430 deeded acres, 640 acres of state school trust leases, and 37 BLM acres, for a total

of 11,107 acres. The first of five parcels, 5,941 acres, was acquired in 1979 from a local rancher. In 1980 and 1981, 1,781 acres belonging to another neighbor was acquired through sale and trade. A smaller parcel of 748 acres was also acquired in 1981. The last acquisition was a 1,638-acre tract almost completely surrounded by the WMA.

The Lewis and Clark National Forest and scattered tracts of BLM land adjoin the western boundary of the WMA. Privately owned ranches surround the management area on the north, east, and south.

In the last 15 years, conservation groups have become more and more interested in Montana's East Front. Federal, state, and private conservation interests are actively purchasing land in the area for wildlife and habitat management purposes. The area is now internationally known for its outstanding wildlife values.

Interest by oil and gas companies also heightened during this period. They have drilled hundreds of miles of seismic lines and 10 wildcat wells in the Blackleaf area. Four of the wells contain natural gas, and they produce seasonally. The Blackleaf WMA has two producing wells and one plugged well within its boundaries, with more development planned. Fish, Wildlife & Parks owns no minerals on the Blackleaf and therefore deals with oil and gas companies as a surface owner only.

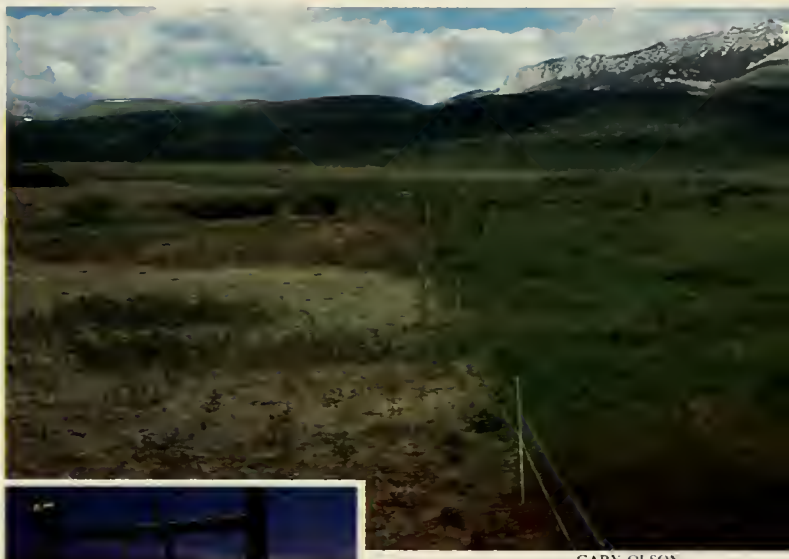
Fifteen permanently marked vegetation transects were established at the time of purchase in 1979 on the major grassland portion of the WMA (approximately 2,500 acres). These transects are monitored to detect changes in the plant community because of management practices, climatic extremes, or other natural events. Rough fescue and bluebunch wheatgrass, considered important winter forage for elk and mule deer, are common grasses in the foothills.

Ten years of total rest from livestock grazing has resulted in an upward trend in the vigor and production of desirable plants. Elk, in particular, are attracted to adjacent grazed private lands during early spring green-up even though abundant forage exists on the WMA. With no grazing to stimulate vigor and productivity, grasses become coarse and unpalatable for elk.

And in this case, it truly is greener on the other side of the fence. Considering the department's goal of 500 wintering elk here, it is imperative that management not only enhance vegetative production, but minimize game damage on adjacent lands. Mule deer numbers do not present any threat to neighboring landowners.

Based on results of the vegetative sampling, a livestock grazing plan was designed to meet the needs of the plant communities, wildlife, and the recreational public using the WMA. Riparian (streamside) zones, wet meadows, and grasslands would be grazed on a rotated schedule to stimulate plant productivity and to provide areas of green feed for elk and deer in early spring.

Livestock grazing was timed and spaced so it would have little effect on spring use of the WMA by black and grizzly bears. Major riparian zones and forested areas would not be grazed, thus allowing unrestricted use of the WMA by bears



GARY OLSON

GARY OLSON

Solar-powered fencing can easily be moved during or after the grazing season.

during late spring and early summer. It is the department's intention to try to avoid undue depredation by any wildlife species on neighboring private lands.

Grazing began in June 1990 on four pastures, each 600 to 700 acres. Individual pastures will be grazed only once every four years, allowing maximum regrowth of palatable bunchgrasses for wintering elk and mule deer. Cows were allowed on the WMA in June 1990 and again in 1991.

The object of this system is to intensively remove forage in a short time. To the untrained eye, a pasture under such treatment looks overgrazed until late summer or fall precipitation stimulates additional growth. The system was designed so that elk would use grazed bunchgrasses in the spring after fall moisture has allowed adequate regrowth. A new "green" area would then be provided each spring, eliminating overuse in one pasture by elk for more than one season.

At present, 150 elk and 200 mule deer winter on the WMA. Over time, management of vegetation on the WMA will probably mean more elk use.

Solar-powered electric fencing is used to distribute livestock and set up pastures. The fence can be easily moved during the grazing season if adjustments are necessary. It is removed by mid-August and stored so that public use of the management area is unimpeded.

Cooperators are charged a grazing fee based upon statistics from the Montana Agricultural Reporting Service.

The question is: Does grazing contribute to increased elk use of the WMA as well as stimulate growth of bunchgrasses that were previously unpalatable? The answer is an unqualified "yes" in both cases. Regrowth of vegetation following removal of livestock has been dramatic. The system was designed to achieve heavy use of forage for a short time, thus

removing years of accumulated old growth to make new growth available to wintering wildlife. And, since intensive livestock grazing occurs only every fourth year on any pasture, plants are accorded the rest needed to maintain healthy root systems.

Results of 1990 research indicate a four-fold increase in elk use on the grazed pasture when compared with 1989 (when no livestock use was allowed). Hopefully, elk utilization of the grazed areas will continue—and keep elk on the WMA rather than adjacent private lands.

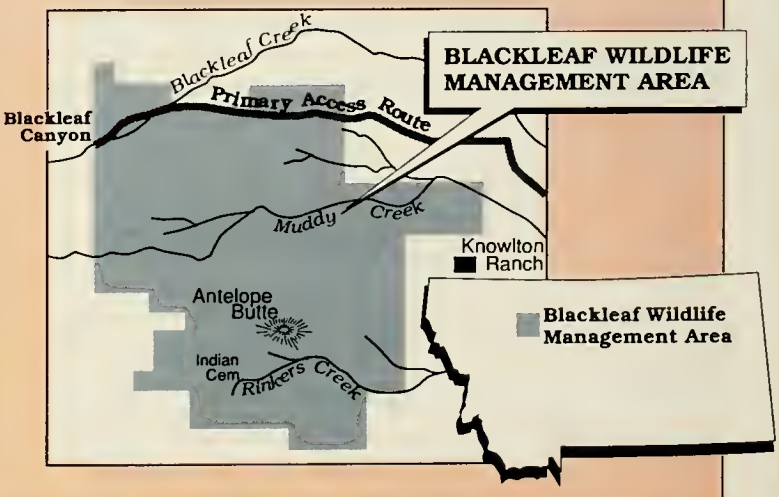
Initial results of the Blackleaf grazing program are encouraging, and hold promise for future use of a very valuable management tool. Cooperation with adjacent ranchers in keeping elk on department lands will help to ensure a promising future for both the wildlife and the range. Allowing more elk to utilize the abundant forage on the WMA will benefit those who wish to hunt or observe this popular game animal. ■

GARY OLSON

The primary goal of the Blackleaf WMA is to provide winter and spring range for elk and mule deer.

BLACKLEAF WILDLIFE MANAGEMENT AREA

Location: Northwestern Teton County, 15 miles west of Bynum; 85 miles northwest of Great Falls.
Size: 11,107 acres.
Access: County road access from U.S. Highway 89 at Bynum. Main roads open year-round, as weather permits. Access to selected parking areas permitted from May 15 to December 1, or July 1 to December 1, depending on location.
Management goal: To provide winter range for elk and mule deer, to prevent game depredation, to provide public access to WMA and adjacent public lands, and to provide spring and summer habitat for black and grizzly bears.
Hunting opportunities: Archery, white-tailed deer, mule deer, elk, bear, upland game birds, and waterfowl hunting are open to licensed hunters during open seasons. Special deer permits and B-tags required for mule deer hunting last two weeks of hunting season. Antlerless and either-sex elk permits are available through the statewide drawing.
Wildlife viewing: Elk, white-tailed deer, and mule deer can be seen from the county road during winter with binoculars or a spotting scope. Black and grizzly bears can occasionally be observed along streams or forest margins. Bird-watching opportunities begin in spring with a variety of songbirds, raptors, waterfowl, and shorebirds. Furbearers such as beavers and muskrats are active in lakes and streams. Coyotes are common in all habitats.



BARBARA THOMAS

"CROSSING THE BARRIERS"

by WILLIAM PHIPPEN

SOMEWHERE DEEP IN MONTANA'S ROOTS lies a seed from which an uncommon compassion and respect for the rights of our fellow citizens grows. Perhaps it's the renowned quality of the environment we share—our crystalline waters, our humbling mountains, our wide-open spaces—that causes the seed to germinate. Or perhaps it is our past—a special kinship among those who, with the help and support of neighbors, weathered recurring hard times yet never abandoned their dreams of living under the Big Sky. Whatever the reason, from generation to generation, a concern for the dignity of our neighbors is there—undeniably there.

So it shouldn't surprise anyone that we would want all Montanans to partake of the largely unmatched recreational opportunities our beautiful state has to offer. Most will gladly accept our invitation, and do. But for an increasing number of Montanans, disabilities sometimes make participating in the state's recreational abundance difficult or impossible.

Our family members, friends, and neighbors with disabilities have a need and a right for recreation, just as we all do. In fact, the importance of partaking in recreational activities is often greater for people with disabilities than for the general populace because of health concerns that limit other options. As it is everywhere in this nation, Montana's population is aging, and with those added years come disabilities ranging from weakened sight and hearing to loss of certain physical capabilities.

Armed with the knowledge that changing demographics and federal accessibility standards now make equal opportunity the law, the Department of Fish, Wildlife & Parks has embarked on a major new program that addresses the needs and rights of our constituents with disabilities.

Called "Crossing the Barriers," the

program is designed to "do what is right" for all Montanans, while also ensuring that FW&P facilities and programs comply with the standards in Section 504 of the Federal Rehabilitation Act of 1973, as amended.

In response to the needs and rights of all Montanans, as well as those who visit our state, FW&P in 1989 began an in-depth study of its facilities, programs, and policies to evaluate its current ability to provide accessibility and to plan for making the necessary modifications. The effort had three basic parts:

(1) a self-evaluation of over 500 sites administered by FW&P;

(2) development of a transition plan to guide the department in achieving its accessibility goals; and

(3) development of a time table for implementing recommendations outlined in the transition plan.

The department also hired a consultant on disability issues to help guide the staff. Judy Harris of Helena, who uses a wheelchair, is an expert in disability awareness training, removal of barriers that impede use of facilities and participation in programs, rights of the disabled, and recreation management. Says Harris: "What persons with disabilities want most is the recognition that those with disabilities have an equal right to receive recreational services." Approximately 17% of Montana's population is affected by some sort of disability, she notes, and that number is expected to grow as the population ages over the next couple of decades. "Almost all of us know someone with a disability and all of us will experience some loss of abilities at some point in our lives. So providing opportunities for those with disabilities really should be important to everyone."

As a member of the FW&P steering committee established to oversee the Crossing the Barriers program, Harris has been instrumental in developing the heart of FW&P's current accessibility program. Before development of that transition plan, selected department staff had evaluated over two-thirds of the department's administrative sites to determine their status in meeting federal accessibility criteria; they will assess the remainder of the sites by the end of 1992. All of FW&P's programs and policies also were assessed. The findings of those evaluations were documented in a draft of the transition plan released in spring 1990. After public comment and internal review, a final plan was released in August 1991.

The plan contains prescriptions for:

(1) modifying FW&P facilities to ensure they are physically accessible to people with disabilities;

(2) expanding programs and services so that disabled citizens can take part in them; and

(3) expanding department policies to include accessibility for people with disabilities as a determining criterion in

MILESTONE ON THE BITTERROOT

by DEIRDRE BOGGS

ANYONE WHO THINKS OUTDOOR RECREATION isn't important to persons with disabilities should talk to Joan Marie Connor.

Connor, a wheelchair user for all but a few of her 54 years, still is affected by memories of two "milestone" trips she took as a passenger in a friend's inflatable boat down a 10-mile stretch of the Bitterroot River in 1983 and 1984. Both runs were from Angler's Roost, south of Hamilton, to Woodside Bridge near Corvallis.

"Those trips are my best memories," Connor says. "They were perfect. There were ducks with their babies, and geese, and osprey. The smells, the sounds—it was all delightful."

Connor's joints, bones, and muscles have been severely impaired by rheumatoid arthritis since she was 2, and she needed lots of help to take those trips. She had to be wrapped in air mattresses for support and lifted in and out of the boat. The only "bad part" of the trip, Connor says, was taking out at Woodside.

Now, a fishing and boating access that the Department of Fish, Wildlife & Parks finished at Woodside Bridge a little over a year ago makes it easier for people with disabilities like Connor's to experience the sights and sounds of the Bitterroot River—either by boat or from shore. The site has a sloped boat ramp and a fishing and observation platform. Connor says the Woodside site is the most wonderful one she has seen.

Connor remembers that when she took her boat rides, there was no ramp or sloping approach from the river to the bank. "The ground at Woodside was so rough and rocky," she says, "that I don't know how my friend kept his balance lifting me out of the boat."

If Connor takes any more Bitterroot trips the "bad part" at Woodside Bridge now will be "a breeze," she says, thanks to the new boat

developing plans for future program and site designs.

For these objectives to become reality, department employees who would implement the recommendations would have to be cognizant of the many challenges faced by people with disabilities and trained in recognizing obstacles to accessibility.

To those in administrative and managerial positions, training workshops may seem like just another fact of business life, another scheduled session that must be—albeit begrudgingly—attended. But this is an area where Harris' ability, and subsequently FW&P's overall accessibility program, really shines.

Harris' workshops, at which participants are encouraged to make use of wheelchairs, don blindfolds or earplugs, and maneuver about on crutches, include information about various types of disabilities and the public's often misguided perceptions of those with disabilities. The workshops also include presentations by those with different kinds of disabilities and open discussion of ways FW&P could better meet the needs of its disabled constituents. These sessions are followed by a field trip to a nearby FW&P property to evaluate the accessibility of the site's facilities. At a follow-up session to discuss findings and present recommen-

MARY ELLEN McDONALD

Judy Harris, an expert in disability awareness training, conducts a workshop designed to help FW&P employees become more cognizant of the challenges faced by people with disabilities.

ramp that replaces the rough terrain and steep banks. The ramp takes off from a smooth, level cul-de-sac at the end of the new access road. Of even more interest to Connor is a paved platform overlooking the river, allowing her to enjoy the river easily without taking a boat trip.

The platform is surrounded by wood railings and ground-level concrete bumpers. The railings are at different levels so that people can lean and watch the river, whether they are using a wheelchair or standing. Getting to the platform along a gently graded, paved trail is no problem for Connor, either in her wheelchair or in her three-wheeler. The platform is roomy enough to turn either vehicle around.

With her three-wheeler, Connor can also drive from the access road and enjoy the trees that surround two sides of the site.

Woodside is FW&P's first accessible fishing and river site in western Montana. The department spent $27,000 on the Woodside project, half state money and half from federal funds. The Bitterroot Chapter of Trout Unlimited gave $500 toward construction of the platform, and the Teller Wildlife Refuge donated about 1-1/4 acres of its land for the road access. Surveyor Steve Powell, who is also a Ravalli County commissioner, did the surveying for the Teller land transfer without charge. In August, FW&P officials dedicated the access to conservationist Otto Teller, founder of the Teller Refuge, and a wooden plaque thanking Teller and Trout Unlimited stands in the site's cul-de-sac.

All of the effort and money were well spent, as far as Connor and others are concerned. "It's the neatest thing that has happened around here for a long time," says John Fliz, executive director of Missoula Developmental Service Corporation. Fliz, who is mobility impaired and a long-time lobbyist for the Montana Association of Independent Disability Services, loves to fish. He says that except for the site at Woodside, most of the terrain along the Bitterroot is too rough for anyone who is mobility impaired. "The Woodside site is going to improve the recreational opportunities for many people—not only those with disabilities," says Fliz.

As wonderful as the Woodside access is, Fliz and Connor caution against seeing it as the sole solution to local river accessibility issues. "We mustn't forget the need for more access for people with disabilities," Fliz says. Along the Bitterroot alone, he believes there are places that could be made more universally accessible without too much trouble. He names Poker Joe and Wally Crawford (Como Bridge) as examples.

Connor, who does peer counseling and disability advocacy work for an Independent Living Center, agrees. "I love the new access," she says. "It lets me experience the river so much more easily than before. I hope Woodside is the starting point for the other projects we need."

dations on improvements, it's not uncommon for a workshop attendee to conclude that the experience was "enlightening" or to sum it up with the exclamation: "I never could have imagined."

Al Elser, deputy director of FW&P who attended a recent workshop, summed up his experience this way: "I was humbled by my own insensitivity to the challenges those with disabilities face. Sitting in a wheelchair, trying to negotiate ramps, graveled paths, and other obstacles, sure brought the message home to me. As an agency, we must make a strong commitment to ensure that people with disabilities have access to our facilities, information, and resources."

Harris has, thus far, conducted three disability awareness training workshops for FW&P staff and a fourth is scheduled for spring. All present and future employees of the department will be required to attend.

This training is undertaken for a purpose, and it's already paying dividends. At all FW&P regional offices, the department's headquarters in Helena, and over 40 FW&P-administered sites around the state, parking areas, rest rooms, and trails have undergone accessibility improvements over the past two years. Of particular note are:

- construction of an accessible dock and observation platform at Riverside Campground at Canyon Ferry State Park to permit people with disabilities to enjoy the increasingly popular gathering of bald eagles on the Missouri River;
- placement of a fishing station for people with disabilities (see sidebar) and construction of accessible latrines at the Woodside Bridge Fishing Access Site on the Bitterroot River near Corvallis;
- construction of FW&P's new Region 5 headquarters in Billings, currently the department's most accessible facility for people with disabilities;
- work recently begun to make all showers, rest rooms, and the Visitor Center at Lewis and Clark Caverns State Park near Whitehall completely accessible to those with disabilities.

Efforts to improve accessibility to department programs are under way as well. To highlight just a few:

- FW&P's Hunter Education Program has geared up to provide classes to disabled residents, as requested. Throughout the state, several volunteer hunter education instructors have provided classes for youths with physical, developmental, and learning disabilities.

MARY ELLEN McDONALD

FW&P employees use a slope indicator to check the cross slope of a path at Spring Meadow State Recreation Area.

- Beginning in 1992, big game hunting and fishing regulations, several department brochures, and other printed material will be available in larger type for the sight impaired.
- The department also will produce selected brochures on audio cassette and, in the future, FW&P displays will incorporate more than just the visual medium.
- Since early 1990, a Telephone Device for the Deaf (TDD) has been in operation at the FW&P headquarters in Helena to enable those with hearing impairments to correspond with agency personnel (the number is 406/444-1200).

Such improvements are certainly appreciated by users with disabilities. Howard Haines, one such user, is a bioenergy engineer with the Montana Department of Natural Resources and Conservation's Energy Division. Says Haines, who is legally blind yet refuses to let his disability get in the way of his passion for recreating in Montana's great outdoors: "When I first came to Montana, the mountains and plains lifted me. This state's sense of grandeur goes beyond normal sight, which is something we all lose as we age. The changes FW&P is now implementing really enhance our relationship with this land; they enable me and my children to enjoy things we couldn't before.

"Actually," he continues, "being a single parent with four small children is more challenging than not being able to see what they see. Any improvements made for those with visual impairments also make things easier for folks with normal vision—as well as for those with small children."

Yet, the real work of improving accessibility throughout the department has just begun. As outlined in the transition plan, over the next several years, FW&P will improve its facilities and programs. Because it will require funding and employee time, some improvements will necessarily occur before others. Many of the efforts will require relatively little time and money to accomplish, while others will require new work directives, considerable funding, and approval from the Montana Legislature.

Throughout this process, FW&P officials have proceeded with the understanding that while modifying existing sites and programs to remove barriers to accessibility is essential, doing so is only a partial solution to the department's overall accessibility goals. That realization is behind the emphasis now being placed on using accessibility as a determining criterion in developing department policies and plans for developing new sites and programs.

Someone once said that even the longest journey begins with a single step.

Bob Maffit is the program officer for Independent Living for the Montana Department of Social and Rehabilitation Services in Helena and oversees compliance with the Americans with Disabilities Act for the state of Montana. Says Maffit of FW&P's current direction: "Real changes take place when awareness and cooperative planning result in positive steps being taken. Changes in attitude will foster access, but only real-life experiences can shape those attitudes.

"FW&P's present plan is doing just that. When we all recreate together, the barriers we once perceived as obstacles or insurmountable challenges seem to dissolve."■

SPRING AHEAD

"When spring escapes
freed from being huddled in winter's sleep
the birds that had been stilled
burst into song.
The buds that had been hidden
burst into flower."

– FROM A 7TH CENTURY POET

PERSPECTIVES

CRAIG JOURDONNAIS

Pasqueflowers: Jim Mepham

Robin: Mike Logan

These early days of spring, when you ask people how they are, you may find yourself treading on eggshells. It is a restless time, for vague and fragile moods.

Crab spider: Alan G. Nelson

Sage grouse: Harry Engels

In a few more weeks, the world will be openly budding and blowing along in greens and golds. Our hopes will be out in the open, too, but by then we'll be fit enough for self-defense if those hopes should by some mischance be betrayed. Now is the really treacherous moment--this well-mined subterranean prelude, when the pale and veiny shoots of crocuses are pushing unstoppably up....We feel set to shed our skin, to grab a small valise and shut the door on our frayed and faded winter life."

--The New Yorker, "Talk of the Town"

Cow elk and calf: Pete and Alice Bengeyfield

Snowshoe hare: Rodney Schlecht